Service Manual

ViewSonic VX2245wm-1

Model No. VS11349

22” Color TFT LCD Display

(VX2245wm-1_SM Rev. 1a Oct. 2006)

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Revision History

Revision	SM Editing Date	ECR Number	Description of Changes	Editor
1a	10/16/2006		Initial Release	Jamie Chang

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1. Precautions and Safety Notices

1. Appropriate Operation

(1) Turn off the product before cleaning.

(2) Use only a dry soft cloth when cleaning the LCD panel surface.

(3) Use a soft cloth soaked with mild detergent to clean the display housing.

(4) Use only a high quality, safety approved AC/DC power cord.

(5) Disconnect the power plug from the AC outlet if the product will not be used for a long period of time.

(6) If smoke, abnormal noise, or strange odor is present, immediately switch the LCD display off.

(7) Do not touch the LCD panel surface with sharp or hard objects.

(8) Do not place heavy objects on the LCD display, video cable, or power cord.

(9) Do not use abrasive cleaners, waxes or solvents for your cleaning.

(10) Do not operate the product under the following conditions:

- Extremely hot, cold or humid environment.
- Areas containing excessive dust and dirt.
- Near any appliance generating a strong magnetic field.
- In direct sunlight.

2. Caution

No modification of any circuit should be attempted. Service work should only be performed after you are thoroughly familiar with all of the following safety checks and servicing guidelines.

3. Safety Check

Care should be taken while servicing this LCD display. Because of the high voltage used in the inverter circuit, the voltage is exposed in such areas as the associated transformer circuits.

4. LCD Module Handling Precautions

4.1 Handling Precautions

(1) Since front polarizer is easily damaged, pay attention not to scratch it.

(2) Be sure to turn off power supply when connecting or disconnecting input connector.

(3) Wipe off water drops immediately. Long contact with water may cause discoloration or spots.

(4) When the panel surface is soiled, wipe it with absorbent cotton or other soft cloth.

(5) Since the panel is made of glass, it may break or crack if dropped or bumped on hard surface.

(6) Since CMOS LSI is used in this module, take care of static electricity and ensure human earth when handling.

(7) Do not open or modify the Module Assembly.

(8) Do not press the reflector sheet at the back of the module in any direction.

(9) In the event that a Module must be put back into the packing container slot after it was taken out of the container, do not press the center of the CCFL Reflector edge. Instead, press at the far ends of the CFL Reflector edge softly. Otherwise the TFT Module may be damaged.

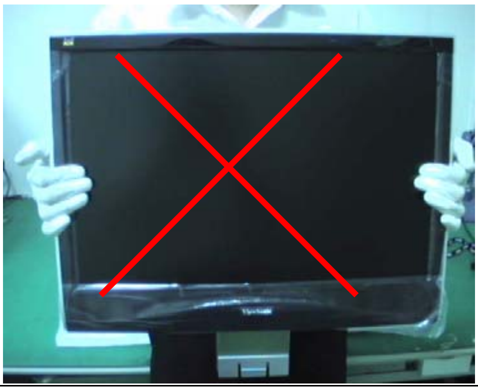
(10) At the insertion or removal of the Signal Interface Connector, be sure not to rotate or tilt the Interface Connector of the TFT Module.

(11) After installation of the TFT Module into an enclosure (LCD monitor housing, for example), do not twist or bend the TFT Module even momentarily. When designing the enclosure, it should be taken into consideration that no bending/twisting forces may be applied to the TFT Module from outside. Otherwise the TFT Module may be damaged.

(12) The cold cathode fluorescent lamp in the LCD contains a small amount of mercury. Please follow local ordinances or regulations for disposal.

(13) The LCD module contains a small amount of materials having no flammability grade. The LCD module should be supplied with power that complies with the requirements of Limited Power Source (IEC60950 or UL1950), or an exemption should be applied for.

(14) The LCD module is designed so that the CCFL in it is supplied by a Limited Current Circuit (IEC60950 or UL1950). Do not connect the CCFL to a Hazardous Voltage Circuit

Correct methods :	Incorrect Methods :
Only touch the metal-frame of the panel or the front cover of the monitor. Do not touch the surface of the polarizer .	Surface of the panel is pressed by fingers & this may cause " MURA "
	
	
Take out the monitor with cushion	Take out the monitor by grasping the LCD panel. That may cause " MURA".
	
Place the monitor on a clean & soft foam pad .	Place the monitor on foreign objects . That could scratch the surface of panel
	

2. Specification

INTRODUCTION

FEATURES			VX2245wm
TFTLCD PANEL 1st CMO A220Z1	Size		22 " wide
	Luminance (Typ)		280 cd/㎡
	Contrast Ratio (Typ)		700:1
	Colors		16.2 M (6 bits + 2 bits FRC)
	Response Time		5 ms(on/off)
	Viewing Angle (H/V)		170 ° / 160 °
	Recommend resolution		1680x1050@60Hz
Input Signal	Video	Analog (Head)	Yes (75ohms, 0.7/1.0 Vp-p)
		Digital (Head)	Yes
	Audio	3.5 mm Audio in (Head)	Yes
		3.5mm 2 in 1 Audio in (Base)	Yes
Output Signal	Audio	3.5 Audio out (Base)	Yes
		Headphone out (Base)	Yes
Sync Compatibility	Separate Sync		Yes
	Composite Sync		Yes
	Sync on Green		Yes
Compatibility	PC		Yes
	Power Mac		Yes
	TV Box (NextVision 6)		Yes
Power Voltage	AC 100-240V, 50/60Hz		Yes
Power Consumption	LCD	On Mode(Typ)	< 38 W
		Off Mode (Max)	≦1 W
	Multimedia base	On Mode(Typ)	< 24 W
		On Mode (Max)	≦30 W
USB	Upstream port (B type) X 1		Yes
	Downstream port (A type) X 4		Yes
Card reader	8 in 1 Function		SD/MMC/MS/MS PRO/CF I & II /MicroDrive/SM
Speaker	2.1 CH - THD 10% (Max) (Sat.: 2.5w x2 ; subwoofer:3w x1)		Yes
Ergonomics	Tilt (20 ° - -5 °)		Yes
	Swivel		No
	Pivot		No
	Height Adjust		No
OSD Control	[1] [2] [⏻][▼] [▲]		Yes
Dimension	Physical (W x H x D)		524 x 493 x 212 mm
	Package (W x H x D)		580 x 610 x 260 mm
Weight	Physical (Net Weight)		6.2Kg / 13.7lbs
	Package (Gross Weight)		8.5Kg / 18.7 lbs
Operating Condition	Temperature (°F/℃)		41°F-95°F/+5℃-+35℃
	Humidity (%)		20 % - 80 %
Storage Condition	Temperature (°F/℃)		-4°F-131°F/-20℃-55℃
	Humidity (%)		20 % - 85 %
Regulation	Global: CB, MPR II,WEEE,ROHS , ISO13406-2 , Energy Star VSA:UL, cUL, FCC-B, TUV-S, NOM, VSE:TUV/ERGO(covers ISO13406-2&MPR II),CE GOST-R+Hygienic ,SASO , ENERGY VSI: BSMI, CCC, PSB, C-TICK, MIC VSCN:CCC		

ViewDock – Multimedia base Spec.

USB Standards	**Device prococal**	USB 2.0/1.1 OHCI (Open Host Controller Interface) EHCI (Enhanced Host Controller Interface)
Compatible Operating Systems		USB 2.0 Speed USB 1.x Speed Mac OS X with USB 2.0 Support Microsoft Windows XP/Me/2000/98SE with USB 2.0 Support Mac OS 8.6 or above with USB 1.x Support and USB Card Support 1.4.1 Microsoft Windows XP/Me/2000/98SE with USB 1.x Support
USB Hub	**Upstream**	1 Upstream USB Type B Receptacle
	Downstream	4 Downstream USB Type A Receptacles
USB Supplied Current		Self-Powered Mode: 500mA /Port Idle Mode : 5mA /Port Operating Mode: 100mA/Port
Card Reader **4 slots**		Secure Digital (SD) Multi Media Card (MMC) Compact Flash (CF) Type I Compact Flash (CF) Type II Micro Drive Smart Media (SM) Memory Stick (MS) Memory Stick Pro (MS Pro)
	Upper Slot	SMC and SD/MMC
	Lower Slot	CF Type I/II and MS/MS Dual/MS Pro
Audio / Speaker	**Subwoofer**	3.0W (typ) ; 5.0W (Max)
	Nominal size	Φ46mm
	S/N	>85dB
	THD	< 10% (Vol. Max)
MIC	**S/N**	60dB (Built-in)
	Sensitivity:	-38dB +- 3dB
VR	**Volume control**	Rotation stopper strength: 1.0Kgf.cm Total rotational angle: 220± 5˚
Audio I/O	**Input**	2-in-1 Audio-in x 1 (Audio-in / MIC-in)
	Output	Audio-out x1 , Headphone out x1
iPOD connector		Compatible with iPOD video/iPOD photo/iPOD nano/iPOD Mini/iPOD U2/iPOD
Power adapter	**External**	Input Voltage Range: 100~240V Input Frequency: 50/60Hz Output Voltage: 12V Full load: 2.0A Peak load: 2.5A
Size		303mm (W) x 212mm (D)
Connectivity		Up to 127 Devices by Cascading Multiple Hubs
Diagnostic LEDs	**Power on**	Yellow-Green
	iPod connecting	Amber
	iPod connecting+Power on	Yellow-green+Amber
Power consumption	**Typical**	24W
	Max.	30W
Storage Temperature		-4ºF to 140ºF (-20ºC to 60ºC)
Storage Humidity		10% to 90% (Non-Condensing)
Operating Temperature		32ºF to 104ºF (0ºC to 40ºC)
Opreating Humidity		20% to 90% (Non-Condensing)
Certifications		Global: CB, WEEE,ROHS VSA:UL, cUL, FCC-B, TUV-S, NOM VSE:CE ,GOST-R+Hygienic ,SASO VSI:BSMI, CCC, PSB, C-TICK, MIC VSCN:CCC
Accessories		USB A-B Cable ; 2-in-1 Cable ; Power adaptor ; iPod adapter set

		(default x 1; 4 in set)
Package content		Viewdock/Quick start guide/CD(for card reader windows 98 driver)/2-in-1 Aduio cable/USB cable/Power adapter/iPod adapter set

Product definition and specification

Region	**VSA**	**VSAP**	**VSE**	**VSCN**
	(M)	**(A)/(P)/(J)/(S)/(K)**	**(E)/(U)**	**(G)**
Product Name	VX2245wm			
Model Number	VS11349			
OSD Languages	English, French, German, Italian, Spanish, , Finnish, Japanese, Traditional Chinese, Simplified Chinese			
TFT LCD Panel and Model #	CMO A220Z1			
Scalar	Realtek, Model # :RTD2553V			
Input Signal	Dual input (1A + 1D)			
Sync Compatibility	Separate / Composite / SOG			
Speaker (2.1ch)	Sat. :2.5W (on LCD Head) Subwoofer : 3W (on Base stand)			
Power Consumption	LCD: Built-in/ 38 W (typ) ; Base: 24W (typ)			
Power Cable	Refer to Appendix G			
Power Adaptor for Multimedia base	Refer to Appendix H			
Analog Cable (1.8 m, color : black), with PC 2001 and Hot Plug Detect &DDC	**YES**			
DVI Cable(1.8m, color: black) with PC 2001	**YES**			
Audio cable (1.8m) Lime green	YES			
USB Cable (A-B type)	YES			
2- in-1 Audio cable	YES			
iPod adapter set	YES			
ViewSonic CD Wizard	Arabic, English, Finnish, Spanish, German, Italian, Japanese, Swedish, Polish, Korean Portuguese, Russian, French, Simplified Chinese, Traditional Chinese, Czech, Hungarian			
ViewSonic Quick Start Guide				
ViewSonic Card-reader driver CD	**YES**			
Screen Protector Mylar	YES			
Portrait CD(Version xxx)	**NO**	**NO**	**NO**	**NO**
Extrme Label (5ms)	**YES**	**YES**	**YES**	**YES**
Pop Sticker (Front bezel / Base)	**YES**	**YES**	**YES**	**YES**
QSG insert	**YES**	**YES**	**YES**	**YES**
Service Insert	**YES**	**NO**	**NO**	**NO**
Warranty Sticker	NO	NO	NO	YES
Warranty Card	NO	NO	NO	YES
Carton Sticker	NO	NO	NO	YES
PE bag of Carton	NO	NO	NO	YES

4-1 GENERAL specification

Test Resolution & Frequency	1680x1050 @ 60Hz
Test Image Size	Full Size
Contrast and Brightness Controls	Factory Default: Contrast = 70%, Brightness = 100%

4-2 VIDEO INTERFACE

Analog Input Connector	DB-15 (Analog), refer the appendix A
Digital Input Connector	DVI-D (Digital), refer the appendix B
Default Input Connector	Defaults to the first detected input
Video Cable Strain Relief	Equal to twice the weight of the monitor for five minutes
Video Cable Connector DB-15 Pin out	Compliant DDC 1/2B
Video Signals	1. Video RGB (Analog) Separate, Composite, and Sync on Green 2. TMDS (Digital)
Video Impedance	75 Ohms (Analog), 100 Ohms (Digital)
Maximum PC Video Signal	950 mV with no damage to monitor
Maximum Mac Video Signal	1250 mV with no damage to monitor
Sync Signals	TTL
DDC 1/2B	Compliant with Revision 1.3
Sync Compatibility	Separate Sync, Composite Sync, SOG
Video Compatibility	Shall be compatible with all PC type computers, Macintosh computers, and after market video cards
Resolution Compatibility	640 x 350*, 640 x 480, 720 x 400* (640 x 400*), 800 x 600, 832 x 624, 1024 x 768, 1152 x 864, 1152 x 870, 1280 x 720, 1280 x 960, 1280 x 1024 , 1400 x 1050 , 1440 x 900 , 1600 x 1200, 1680 x 1050 * The image vertical size might not be full screen. But the image vertical position should be at the center.
Exclusions	Not compatible with interlaced video

POWER SUPPLY (LCD Head)

Internal Power Supply	27-D009542
Input Voltage Range	90 to 264 VAC
Input Frequency Range	47 to 63 Hertz
Short Circuit Protection	Output can be shorted without damage
Over Current Protection	5.0 A typical at 12.0 VDC
Leakage Current	3.5mA (Max) at 254VAC / 60Hz
Efficiency (at 115VAC Full Load)	Typical: 80% Minimum: 75%
Fuse	Internal and not user replaceable
Power Output	50 Watts (typ)
Ripple and Noise	Ripple: <3% Noise: <1%
Max Input AC Current	1.5 Arms @ 90VAC, 0.75 Arms @180VAC
Inrush Current (Cold Start)	50 A (max) @ 115VAC 90 A (max) @ 230VAC
Power Supply Cold Start	Shall start and function properly when under full load, with all combinations of input voltage, input frequency, and operating temperature.
Power Supply Transient Immunity	Shall be able to withstand an ANSI/IEEE C62.41-1980 6000V 200 ampere ring wave transient test with no damage.
Power Supply Line Surge Immunity	Shall be able to withstand 1.5 times nominal line voltage for one cycle with no damage.
Power Supply Missing Cycle Immunity	Shall be able to function properly, without reset or visible screen artifacts, when ½ cycle of AC power is randomly missing at nominal input.
Power Supply Acoustics	The power supply shall not produce audible noise that would be detectable by the user. Audible shall defined to be in

	compliance with ISO 7779 (DIN EN27779:1991) Noise measurements of machines acoustics. Power Switch noise shall not be considered.		
Power Saving Operation(Method)	VESA DPMS Signaling		
Power Consumption	Mode	LED	Power Consumption
	On	Blue	38W (typ) 43W (max)
	Active off	Amber	<1W
	Off	Off	<1W
Recovery Time	On Mode = N/A, Active Off < 3 sec		

4-4 ELECTRICAL REQUIREMENT

Horizontal / Vertical Frequency

Horizontal Frequency	24 – 82 kHz
Vertical Refresh Rate	50 – 85* Hz
Maximum Pixel Clock	150 MHz
Sync Polarity	Independent of sync polarity.

Timing Table

Item	Timing	Analog			Digital - TMDS	Remark
		Separated	Composite	SOG		
1	640 x 350 @ 70 Hz, 31.5 KHz	✓	✓	✓	✓	For Analog sync, the image vertical size image will be not full screen (Still at the center), And the OSD will be 640x350/640x400/720x400 (primary= 720x400).
2	640 x 350 @ 85 Hz, 37.9 KHz	✓	✓	✓	✓	For Analog sync, the image vertical size image will be not full screen (Still at the center), And the OSD will be 640x350/640x400/720x400 (primary= 720x400).
3	640 x 400 @ 60 Hz, 31.5 KHz	✓	✓	✓	✓	For Analog sync, switch 640x400@60Hz and 640x480@60Hz by [1]+[2] short cut key (primary = 640x480@60Hz)
4	640 x 400 @ 70 Hz, 31.5 KHz	✓	✓	✓	✓	For Analog sync, the image vertical size image will be not full screen (Still at the center), And the OSD will be 640x350/640x400/720x400 (primary= 720x400).
5	640 x 400 @ 85 Hz, 37.9 KHz	✓	✓	✓	✓	For Analog sync, the image vertical size image will be not full screen (Still at the center), And the OSD will be 640x350/640x400/720x400 (primary= 720x400).
6	640 x 480 @ 50 Hz, 24.7 KHz	✓	✓	✓	✓	
7	640 x 480 @ 60 Hz, 31.5 KHz	✓	✓	✓	✓	For Analog sync, switch 640x400@60Hz and 640x480@60Hz by [1]+[2] short cut key (primary = 640x480@60Hz)
8	640 x 480 @ 67 Hz, 35 KHz	✓	✓	✓	✓	
9	640 x 480 @ 72 Hz, 37.9 KHz	✓	✓	✓	✓	
10	640 x 480 @ 75 Hz, 37.5 KHz	✓	✓	✓	✓	
11	640 x 480 @ 85 Hz, 43.3 KHz	✓	✓	✓	✓	
12	720 x 400 @ 70 Hz, 31.5 KHz	✓	✓	✓	✓	For Analog sync, the image vertical size image will be not full screen (Still at the center), And the OSD will be 640x350/640x400/720x400 (primary= 720x400).
13	720 x 400 @ 85 Hz, 37.9 KHz	✓	✓	✓	✓	For Analog sync, the image vertical size image will be not full screen (Still at the center), And the OSD will be 640x350/640x400/720x400 (primary = 720x400).
14	720 x 480 @ 60 Hz, 31.5 KHz	✓	✓	✓	✓	For Analog sync, the image vertical size image will

						be not full screen (Still at the center),and the information OSD shows 640x480
15	720 x 576 @ 50 Hz, 31.3 KHz	✓	✓	✓	✓	For Analog sync, the image vertical size image will be not full screen (Still at the center),and the information OSD shows 800x600
16	800 x 600 @ 56 Hz, 35.1 KHz	✓	✓	✓	✓	
17	800 x 600 @ 60 Hz, 37.9 KHz	✓	✓	✓	✓	
18	800 x 600 @ 72 Hz, 48.1 KHz	✓	✓	✓	✓	
19	800 x 600 @ 75 Hz, 46.9 KHz	✓	✓	✓	✓	
20	800 x 600 @ 85 Hz, 53.7 KHz	✓	✓	✓	✓	
21	832 x 624 @ 75 Hz, 49.7 KHz	✓	✓	✓	✓	
22	1024 x 768 @ 50 Hz, 39.6 KHz	✓	✓	✓	✓	For Analog sync, Switch 1024x768@50Hz and 1280x768@50Hz by [1]+[2] short cut key (primary = 1024x768@50Hz)
23	1024 x 768 @ 60 Hz, 48.4 KHz	✓	✓	✓	✓	
24	1024 x 768 @ 70 Hz, 56.5 KHz	✓	✓	✓	✓	
25	1024 x 768 @ 75 Hz, 60 KHz	✓	✓	✓	✓	
26	1024 x 768 @ 75 Hz, 60.2 KHz	✓	✓	✓	✓	
27	1024 x 768 @ 85 Hz, 68.7 KHz	✓	✓	✓	✓	
28	1152 x 864 @ 75 Hz, 67.5 KHz	✓	✓	✓	✓	
29	1152 x 870 @ 75 Hz, 68.7 KHz	✓	✓	✓	✓	
30	1280 x 768 @ 50 Hz, 39.6 KHz	✓	✓	✓	✓	For Analog sync, Switch 1024x768@50Hz and 1280x768@50Hz by [1]+[2] short cut key (primary = 1024x768@50Hz)
31	1280 x 768 @ 60 Hz, 47.4 KHz	✓	✓	✓	✓	
32	1280 x 768 @ 60 Hz, 47.8 KHz	✓	✓	✓	✓	
33	1280 x 768 @ 75 Hz, 60.3 KHz	✓	✓	✓	✓	For Analog sync, Switch 1024x768@75Hz and 1280x768@75Hz by [1]+[2] short cut key (primary = 1024x768@75Hz)
34	1280 x 768 @ 85 Hz, 68.6 KHz	✓	✓	✓	✓	For Analog sync, Switch 1024x768@85Hz and 1280x768@85Hz by [1]+[2] short cut key (primary = 1024x768@85Hz)
35	1280 x 960 @ 50 Hz, 49.4 KHz	✓	✓	✓	✓	
36	1280 x 960 @ 60 Hz, 59.7 KHz	✓	✓	✓	✓	
37	1280 x 960 @ 75 Hz, 75.2 KHz	✓	✓	✓	✓	
38	1280 x 1024 @ 50 Hz, 52.7 KHz	✓	✓	✓	✓	
39	1280 x 1024 @ 60 Hz, 64 KHz	✓	✓	✓	✓	
40	1280 x 1024 @ 70 Hz, 74.6 KHz	✓	✓	✓	✓	
41	1280 x 1024 @ 72 Hz, 76.8 KHz	✓	✓	✓	✓	
42	1280 x 1024 @ 75 Hz, 80 KHz	✓	✓	✓	✓	
43	1360 x 768 @ 60 Hz, 47.7 KHz	✓	✓	✓	✓	
44	1400 x 1050 @ 50 Hz, 54.1 KHz	✓	✓	✓	✓	
45	1400 x 1050 @ 60 Hz, 64.7 KHz	✓	✓	✓	✓	
46	1400 x 1050 @ 60 Hz, 65.3 KHz	✓	✓	✓	✓	For analog sync,, Switch 1400x1050@60Hz and 1680x1050@60Hz by [1]+[2] short cut key (primary = 1680x1050@60Hz)
47	1400 x 1050 @ 75 Hz, 82.3 KHz	✓	✓	✓	✓	
48	1440 x 900 @ 60 Hz, 55.5 KHz	✓	✓	✓	✓	
49	1440 x 900 @ 60 Hz, 59.9 KHz	✓	✓	✓	✓	
50	1440 x 900 @ 75 Hz, 75 KHz	✓	✓	✓	✓	
51	1600 x 1200 @ 60 Hz, 75 KHz	✓	✓	✓	✓	
52	1680 x 1050 @ 60 Hz, 65.3 KHz	✓	✓	✓	✓	For analog sync,, Switch 1400x1050@60Hz and 1680x1050@60Hz by [1]+[2] short cut key (primary = 1680x1050@60Hz)

*1. Tolerance ≧ ±2KHz. (if the range dose not cover other timing mode)
*2. Any timing not in the list, it should display as normal or show on “OUT OF RANGE” OSD message with blanking.
*3. The image quality of 85Hz mode might be worse than 75Hz.

Primary Presets

1680x1050 @ 60Hz

User Presets

Number of User Presets (recognized timings) Available: 10 presets total in FIFO configuration

Changing Modes

Maximum Mode Change Blank Time for image stability : 5 seconds (Max), excluding "Auto Adjust" time
Under DOS mode (640 x 350, 720 x 400 & 640 x 400), it should recall factory setting when execute "Auto Adjust"
The monitor needs to do "Auto Adjust" the first time a new mode is detected
(see section "0-Touch™ Function Actions")
While running Change Mode, Auto Adjust or Memory Recall, the image shall blank

4-5 FRONT PANEL CONTROLS AND INDICATORS

Front Panel Hardware Controls

Power Switch (Front Head)	**Power Control, soft Power Switch.**
Power LED (Front Head)	**Blue – ON** **Orange – Active Off** **Dark = Soft Power Switch OFF**
Front Panel Controls (Head) [1] [2] [⏻] [▼] [▲]	[1] Button 1 **[2] Button 2** **[⏻] Power** [▼] Down arrow button [▲] UP ARROW BUTTON **Note: Power Button, Button 1 and Button 2 must be one-shot logic operation. (i.e. there should be no cycling)**
Reaction Time	OSD must fully appear within 0.5s after pushing Button 1

Short Cuts Function from the button(s)

[1]	**Main Menu**
[2]	**Input toggle (Analog or Digital)**
[▼]	**To immediately activate Brightness/Contrast menu.**
[▼] +[▲]	**Recall both of Contrast and Brightness to default**
[1] + [2]	**Toggle 720x400 and 640x400 mode when input 720x400 or 640x400 mode**
[1] + [▼] + [▲] (Keep pushing 3 sec)	**White Balance. (Not shown on user's guide)**
[1] + [▼]	**Power Lock**
[1] + [▲]	**OSD Lock**
[▲]	**Essential mode switch** **Standard ->Text -> Cinema -> Game -> Portrait -> Scenery -> Vivid**
[2] + [▲]	**Skin tone switch** Nature -> Reddish -> yellowish
[▼] +[▲] + [⏻]	**Factory Mode**
Remark : All the short cuts function are only available while OSD off	

Main Menu Controls

Auto Image Adjust*[1]
Contrast/Brightness*[2]*[4]
Input Select
Analog, Digital
Audio Adjust
Volume*4, Mute*4
Color Adjust
SRGB, 9300K,7500K, 6500K(default), 5400,User Color [R, G, B]
Information [H Frequency, V Frequency, Resolution, Pixel Clock, Serial Number, Model Number, ["www.ViewSonic.com"]
Manual Image Adjust
Horizontal Size*[1], H/V. Position*[1], Fine Tune*[1], Sharpness*[3], Opticolor [Standard, Text , Cinema, Game, Portrait, Scenery, Vivid], Opticolor Skin Tone[Nature, reddish ,yellowish]
Setup Menu

Language [English, French, German, Italian, Spanish, Finnish, Japanese, Simplified Chinese, Traditional Chinese], Resolution Notice, OSD Position, OSD Timeout, OSD Background
Memory Recall

***1 These functions are not available in Digital Mode**
***2 These functions are not available under SRGB Mode, Opticolor On, and Opticolor Skin Tone On**
***3 These functions are not available under Native Resolution Mode**
***4 These functions setting can be recalled to default value by pressing [▼]+[▲]**

[Remark] Please refer to the detail in the Appendix C

Function descriptions

OSD Lock short cuts function for the buttons

The OSD lock will be activated by pressing the front panel control buttons "(1), & (▲)" for 10 seconds. If the user then tries to access the OSD by pressing any of the buttons "1", "▼", "▲", "2" a message will appear on the screen for 3 seconds showing "OSD Locked". The OSD lock will be deactivated by pressing the front panel control buttons "(1), & (▲)" again for 10 seconds.

Note1: When the OSD is locked will lock all functions, including “Volume” and “Mute”

Note 2: Status bar indicating OSD Lock or Unlock is in progress and when complete it will indicate “OSD Locked”

Note 3: OSD Lock should not lock Power Button and Power Lock function

4-6 AUDIO INTERFACE (LCD SIDE-SPEAKER SPECIFICATION)

Line input signal	1.0 Vrms @1kHz
Line input impedance	10 kOhm
Maximum Amp power output (Watt)	2 W (RL=4Ω)
Amp -THD	< 10 % THD @1kHz
Speaker Power rating(Ω/Watt)	4Ω/2.5 W (TYP.) ; 4Ω/ 3 W (MAX)
Signal to Noise Ratio	72 dB
Frequency response	Fo – 20kHz
SPL.	85 ± 3 dB (at 0.5m)
FO	300 Hz
Line input connection	3.5 mm stereo jacks
Vibration	There should be no audible vibration resonance at volume=100% & treble / bass in def. Value
Screen image	There should be no affect on the screen image stability under any conditions
Connector PC99 requirement Audio in	Lime Green pantone # 577C
Cable type / length	3.5mm stereo cable / 1.8m length
Audio DPMS	SPEAKERS STAY OFF WHEN THE REST OF THE MONITOR IS IN POWER SAVING

* No any sympathetic or abnormal noise allowed.

4-7 TFT LCD PANEL

1st Source Panel

Model number	CMO A220Z1
Type	TN type with RSDS interface
Active Size	22" wide ; 473.76 (H) x 296.1 (V)
Pixel Arrangement	RGB Vertical Stripe
Pixel Pitch	0.282(H) x 0.282(H) mm
Glass Treatment	Anti Glare (Hard coating 3H)
# of Backlights	4 CCFL ; Top & Bottom edge side
Backlight Life	40,000 Hours (Min)
Luminance (5-point) – Condition: CT = 6500K, Contrast = Max, Brightness = Max	280 cd/m2 (Typ after 30 minute warm up) 200 cd/m2 (Min after 30 minute warm up)
Brightness Uniformity	77 % (Typ) / 67 % (Min)
Contrast Ratio	700:1 (typ), 450:1 (min)
Color Depth	16.2 million colors (6 bits + 2 bits FRC)
Viewing Angle (Horizontal)	@ CR>10 Typical: 170º Minimum: 150º
Viewing Angle (Vertical)	@ CR>10 Typical: 160º Minimum: 140º
Response Time 10%-90% @ Ta=25°C	Typical = 5ms (Tr =2 ms,Tf =3 ms) Maxmum = 15ms (Tr =7 ms,Tf =8 ms)
Mercury	3.0 mg per lamp
Panel Defects	Please see Panel Quality Specifications.

*The average of measured value from monthly shipment shall be equal or better than the Typical value above.

4-8 IMAGE PERFORMANCE

Factory Defaults

Item	Defaults	Item	Defaults
Contrast	70%	OSD Time Out	15 Sec
Brightness	100%	OSD Background	On
Color Temperature	6500K	Volume	90%
Sharpness	100%	Treble	N/A
OSD H. Position	50%	Bass	N/A
OSD V. Position	50%	Input Priority	Auto Search
720x400/640x400	720x400	Resolution Notice	Enabled

Display Size

Horizontal Display Size, Primary Preset	Full Screen
Vertical Display Size, Primary Preset	Full Screen

Luminance

Lv (Max) – Condition: Contrast = 100% Brightness = 100% CCT = User color(R/G/B=100%)	Lv (Max) = The Luminance in section 4-7 "TFT LCD PANEL"
Lv (sRGB) – Condition: Contrast = Default Brightness = Default CCT = sRGB	110 nits ≦ Lv (sRGB) ≦ 140 nits
Lv (6500k) –	Lv (6500K) / Lv (Max) x 100% > 85%

Condition: Contrast = Default Brightness = Default CCT = 6500K	
Lv (9300k) – Condition: Contrast = Default Brightness = Default Color Temperature = 9300K	Lv (9300k) / Lv (Def) x 100% > 70%
Lv (7500k) – Condition: Contrast = Default Brightness = Default Color Temperature = 7500K	Lv (7500k) / Lv (Def) x 100% > 75%
Lv (5400k) – Condition: Contrast = Default Brightness = Default Color Temperature = 5400K	Lv (5400k) / Lv (Def) x 100% > 75%
Lv (Brightness) –Condition: Contrast = 100%	Lv(Brightness=0%) / Lv(Brightness=100%) x 100% 55%
Lv (Contrast) –Condition: Brightness = 100%	Lv(Contrast =0%) / Lv(Contrast =100%) x 100% 30%

Contrast Ratio

CR(Max) –Condition: Contrast / Brightness = 100% CCT = USER COLOR (R/G/B=100%)	Same as the Contrast Ratio in section 4-6 "TFT LCD PANEL"
CR(6500K) –Condition: Contrast / Brightness = Default CCT = 6500K	CR(6500K) / CR(Max) ≧ 85%

* ≧50% units of shipment shall be equal or better than typical CR spec.

Saturation

Contrast = Default **Brightness = Default** Test Pattern = 64-Gray	**No visible saturation**
Contrast =100% **Brightness = 100%** **Test Pattern = 32-Gray**	**>1 and <3 – level saturation**

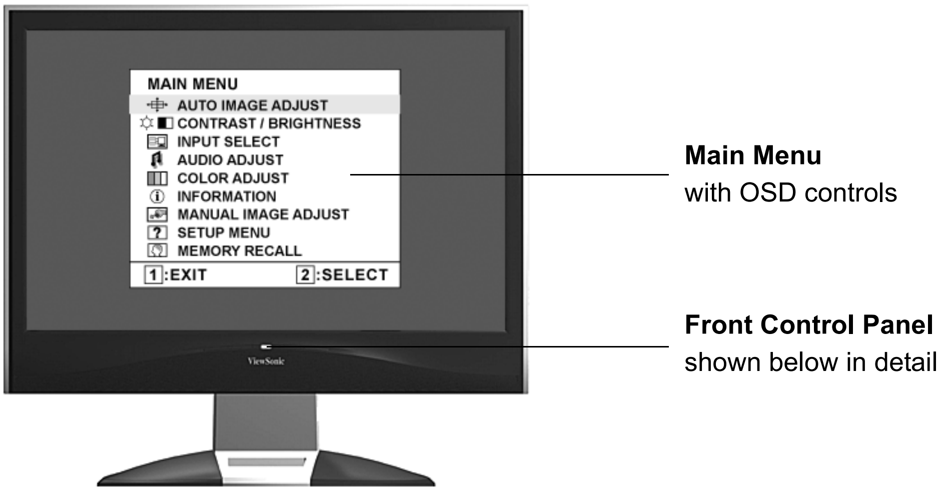
Preset Color Temperatures

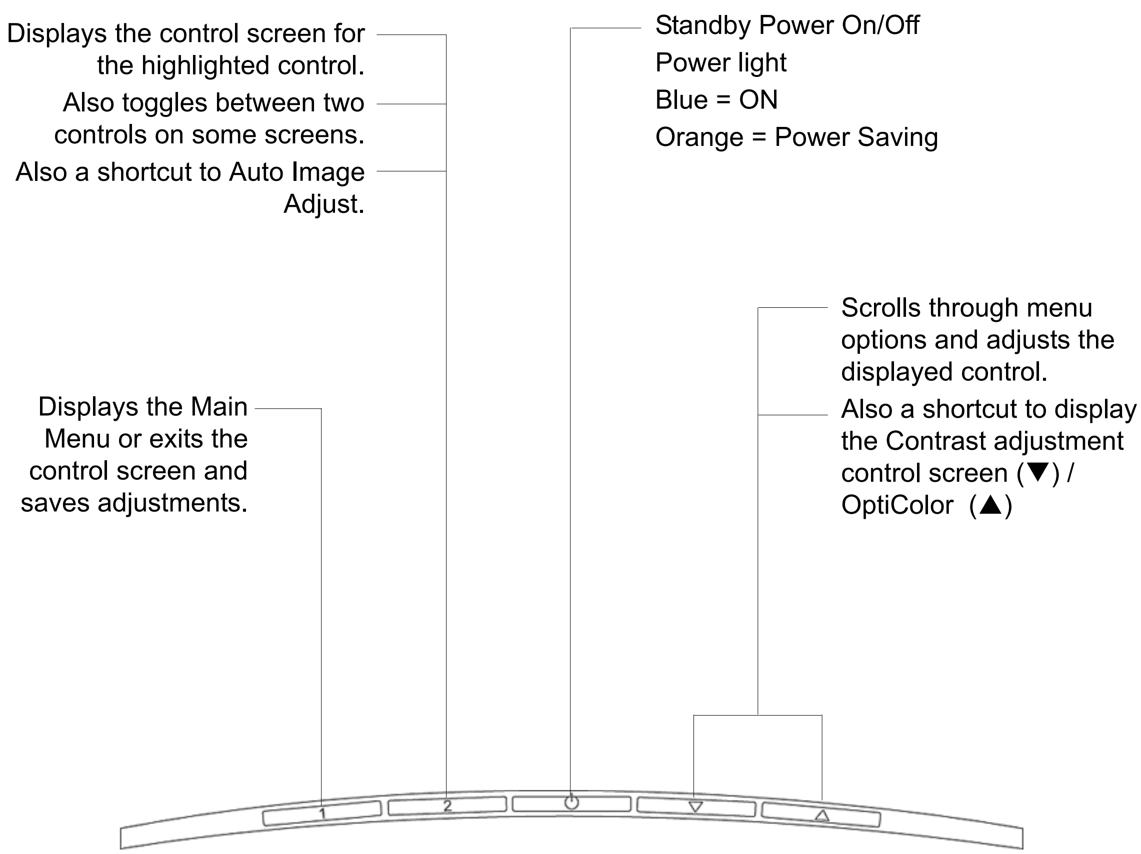
sRGB	**It should meet IEC 61966-2-1 (1999-10) standard.**
Preset 1	CCT (typ) = 9300K x=0.283±0.03 y=0.298±0.03
Preset 2	CCT (typ) = 7500K x=0.299±0.03 y=0.315±0.03
Preset 3 (Primary)	CCT (typ) = 6500K x=0.313±0.03 y=0.329±0.03
Preset 4	CCT (typ) = 5400K x=0.336±0.03 y=0.348±0.03
Preset Color Temperature Adjustability	Each color preset shall be adjustable. Red, Green, and Blue shall be individually controlled.

* Any gray level and Contrast/Brightness should not get reddish, greenish or bluish.

Adjusting the Screen Image

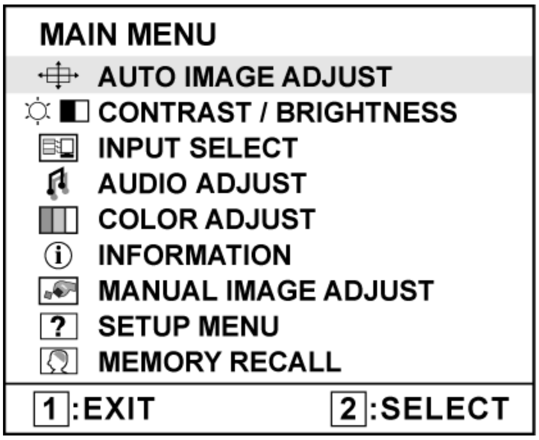
Use the buttons on the front control panel to display and adjust the OSD controls which display on the screen. The OSD controls are explained at the top of the next page and are defined in "Main Menu Controls" on page 10.





Do the following to adjust the display setting:

1. To display the Main Menu, press button [1].



NOTE: All OSD menus and adjustment screens disappear automatically after about 15 seconds. This is adjustable through the OSD timeout setting in the setup menu.

2. To select a control to adjust, press▲or▼to scroll up or down in the Main Menu.

3. After the desired control is selected, press button [2]. A control screen like the one shown below appears.



The command line at the bottom of the control screen tells what to do next from this screen. You can toggle between control screens, adjust the selected option, or exit the screen.

4. To adjust the setting, press the up ▲ or down ▼ buttons.

5. To save the adjustments and exit the menu, press button [1] *twice*.

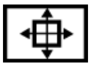
The following tips may help you optimize your display:

- Adjust the computer's graphics card so that it outputs a 1680 x 1050 @ 60Hz video signal to the LCD display. (Look for instructions on “changing the refresh rate” in the graphics card's user guide.)
- If necessary, make small adjustments using H. POSITION and V. POSITION until the screen image is <u>completely visible</u>. (The black border around the edge of the screen should barely touch the illuminated “active area” of the LCD display.)

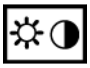
Main Menu Controls

Adjust the menu items shown below by using the up ▲ and down ▼ buttons.

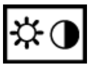
Control **Explanation**



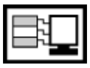
Auto Image Adjust sizes and centers the screen image automatically.



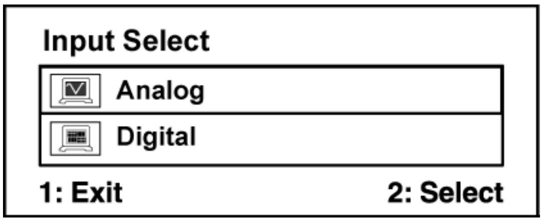
Contrast adjusts the difference between the image background (black level) and the foreground (white level).



Brightness adjusts background black level of the screen image.



Input Select toggles between inputs if you have more than one computer connected to the VX2245wm.





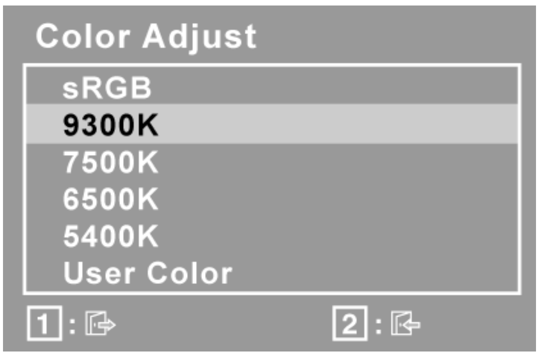
Audio Adjust

Volume increases the volume, decreases the volume, and mutes the audio.

Mute temporarily silences audio output.



Color Adjust provides several color adjustment modes, including preset color temperatures and a User Color mode which allows independent adjustment of red (R), green (G), and blue (B). The factory setting for this product is 6500K (6500 Kelvin).



sRGB-This is quickly becoming the industry standard for color management, with support being included in many of the latest applications. Enabling this setting allows the LCD display to more accurately display colors the way they were originally intended. Enabling the sRGB setting will cause the Contrast and Brightness adjustments to be disabled.

9300K-Adds blue to the screen image for cooler white (used in most office settings with fluorescent lighting).

7500K - Adds blue to the screen image for cooler white (used in most office settings with fluorescent lighting).

6500K-Adds red to the screen image for warmer white and richer red.

5400K-Adds green to the screen image for a darker color.

User Color Individual adjustments for red (R), green (G), and blue (B).

1. To select color (R, G or B) press button [2].

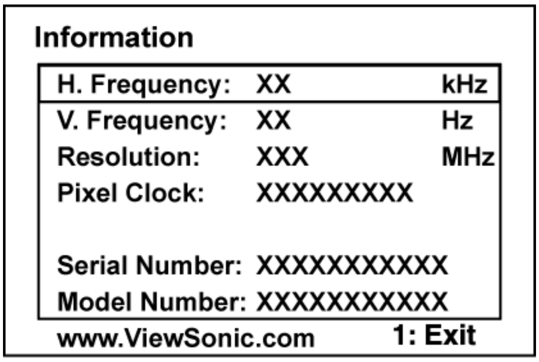
2. To adjust selected color, press▲and▼.

Important: If you select RECALL from the Main Menu when the product is set to a Preset Timing Mode, colors return to the 6500K factory preset.



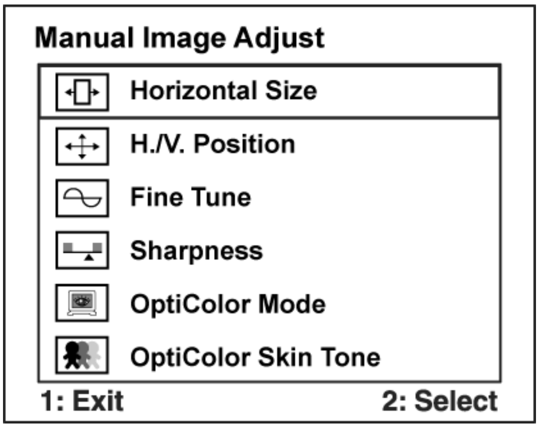
Information displays the timing mode (video signal input) coming from the graphics card in the computer, the LCD model number, the serial number, and the ViewSonic® website URL. See your graphics card's user guide for instructions on changing the resolution and refresh rate (vertical frequency).

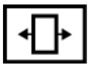
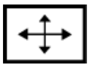
NOTE: VESA 1680 x 1050 @ 60Hz (recommended) means that the resolution is 1680 x 1050 and the refresh rate is 60 Hertz.

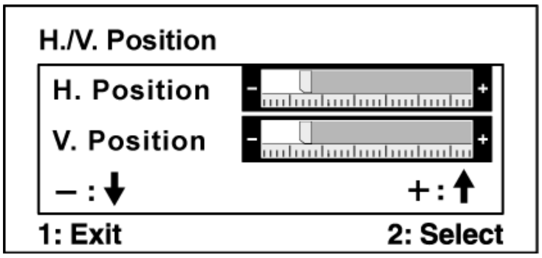




Manual Image Adjust



Control	Explanation
	**Horizontal Size** adjusts the width of the screen image.
	**H./V. Position (Horizontal/Vertical Position)** moves the screen image left or right and up or down.



	**Fine Tune** sharpens the focus by aligning text and/or graphics with pixel boundaries. **NOTE:** Try Auto Image Adjust first.
	**Sharpness** adjusts the clarity and focus of the screen image.
	**OptiColor Mode** provides an optimum display environment depending on the contents displayed. It contains 7 user-selectable presets. These 7 presets are easily accessible from the short cut keys.

Standard is for general windows environment and monitor default setting.

Text optimized for text editing and viewing in a word processing environment.

Cinema optimized for movie and video environment.

Game optimized for PC/TV game environment.

Portrait optimized for displaying indoor portraits and enhancing pictures.

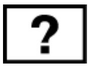
Scenery optimized for displaying outdoor scenery images.

Vivid optimized for color luster and sharpness.

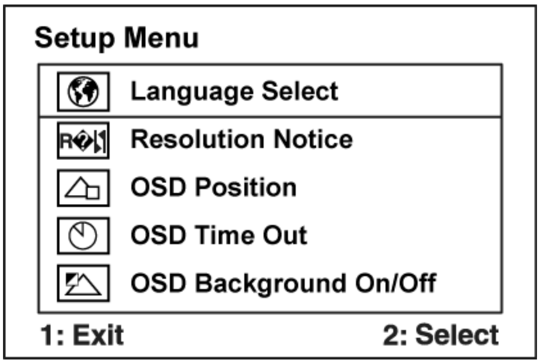
These 7 presets are carefully chosen by Viewsonic, but may not suit all users' tastes. In that case, the user can either return to the Standard setting and manually adjust the brightness and contrast as desired.

	**OptiColor Skin Tone** includes 3 presets (Natural / Red Tone / Yellow Tone) which user can select according to user's preference.

Control	Explanation



Setup Menu displays the menu shown below:

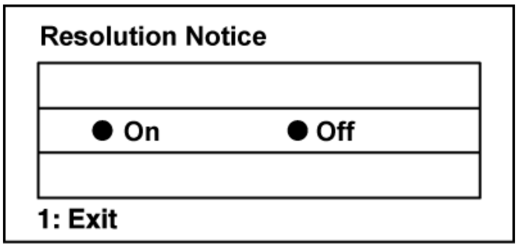




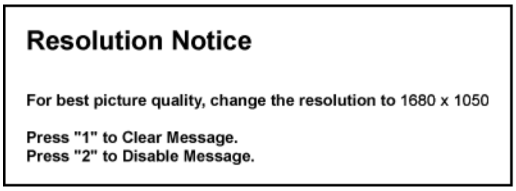
Language Select allows the user to choose the language used in the menus and control screens.



Resolution Notice allows the user to enable or disable this notice.



If you enable the Resolution Notice shown above and your computer is set at a resolution other than 1680 x 1050, the following screen appears.





OSD Position allows the user to move the OSD menus and control screens.



OSD Timeout sets the length of time the OSD screen is displayed. For example, with a “30 second” setting, if a control is not pushed within 30 seconds, the display screen disappears.



OSD Background allows the user to turn the OSD background On or Off.

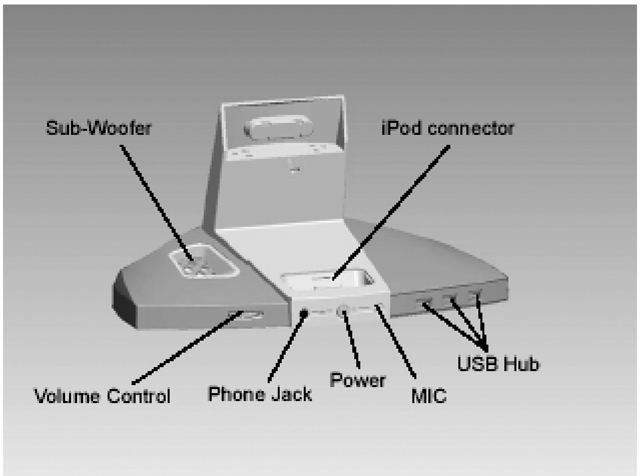


Memory Recall returns the adjustments back to factory settings if the display is operating in a factory Preset Timing Mode listed in the Specifications of this manual.

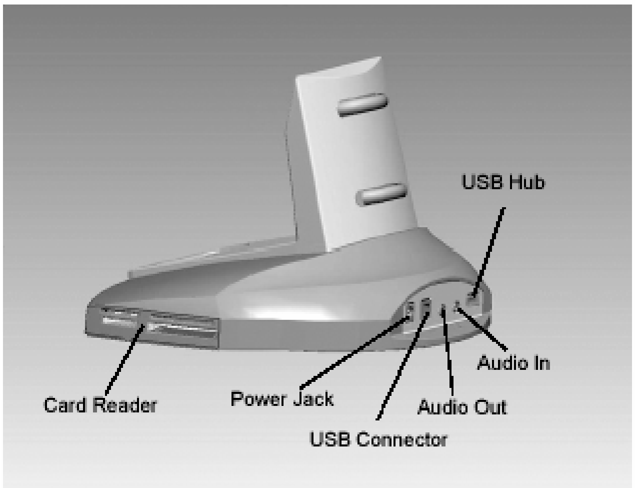
Physical Description

Please refer to the following illustrations to identify the components of the ViewDock.

Front View



Rear view

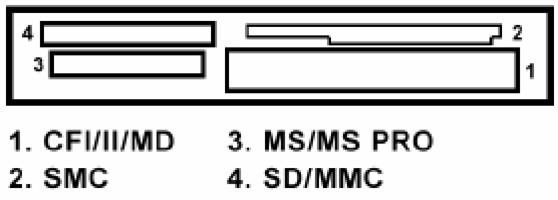


Card Reader Installation

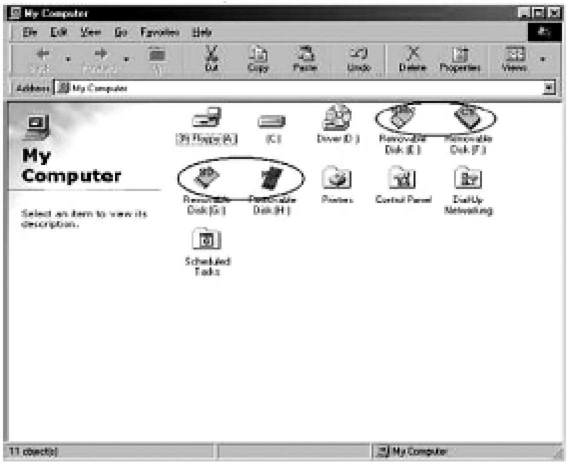
Refer to the following information

After connecting the ViewDock to your PC, Windows File Manager will show 4 extra icons.

Step1. Please check your card socket



Step2. Insert your memory card. Each slot of the card reader will be recognized as a Removable Disk and the icon will be shown in "My Computer" of Windows



You do not need to install any special drivers for the Card Reader if your OS is Windows 2000/ ME/XP.

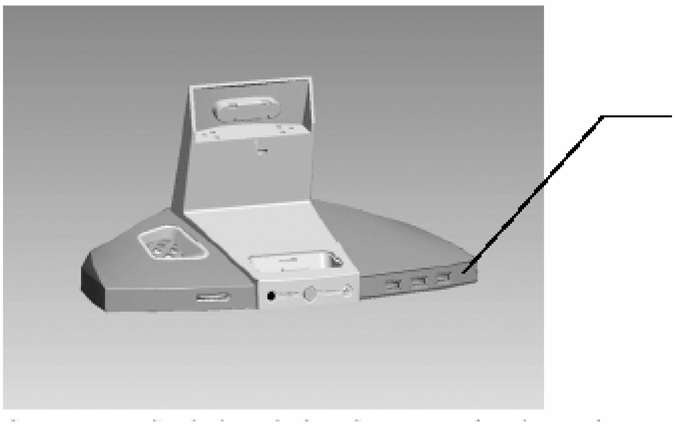
Card reader Installation guide for Windows 98SE :

(Please do not connect the ViewDock to your PC's USB port before running the CD):

1. Insert the driver CD into the CD-ROM
2. Please launch the .exe file and the driver will be installed automatically.
3. After completing installation, connect the ViewDock to your PC's USB port. The card reader is now operational.
4. Each slot of the card reader will be recognized as a Removable Disk and the icon will be shown in "My Computer."

USB Hub Installation

Refer to the following information



Connect any USB devices via the USB ports on the ViewDock.
Windows will auto detect and install the generic Windows USB driver for USB 1.1/2.0 device operation.
You do not need to install any special drivers for the USB Hub if your OS is Windows 2000/ ME/XP.

USB hub installation guide for Windows 98SE :

Insert the included CD into the CD-ROM drive. The Autorun feature will automatically begin the installation process. Follow the instructions on the screen to install the driver. If the setup program does not start automatically, go to "My Computer" and double-click on the CD-ROM drive, and select "Setup.exe" from the CD.

Note: If USB device is not detected , does not work properly:

1. Double click the "System" icon in Control Panel.
2. Select the "Device Manager" tab from System Properties dialog window.
3. Select "Other devices" to see the contents.
4. Select "Unknown device" and click "Remove" button.
5. Click the "Refresh" button and system will find a new device.

ViewDockTM Connecting with iPod

Refer to the following information

1. Make sure the ViewDock power is ON.

2. Dock your iPod into the universal iPod docking station with the appropriate adapter insert.

3. The iPod LED indicator will turn on amber

4. Wait for a few seconds for the iTunes software to launch.

5. Play your favorite song with iTunes software (for all iPod models) or play music from iPod directly (excluding iPod shuffle.)

iPod adapter insert description:

iPod with video adaptor is a default setting for multimedia base.

Adapter No.	Work with Ipod models
1.	iPod nano
2.	iPod mini (1st/ 2nd Generation)
3.	iPod Vedio iPod with color display (20G/U2) iPod with Click Wheel (20G/U2)
4.	iPod with color display (30G) iPod with dock connector (10/15/20G)
5.	iPod with color display (60G) iPod photo (40/60G) iPod with Click Wheel (40G) iPod with dock connector (30/40G)

Subwoofer Volume Control

Refer to the following information

1. Adjust subwoofer volume via volume control
2. " " Turn right to increases the subwoofer volume.
3. " " Turn left to decreases the subwoofer volume.
4. In order to obtain the optimum listening environment, please adjust the volume of stereo speakers in the monitor head via the monitor OSD menu to match and balance the subwoofer volume.



4. Circuit Description

1.RTD 2553V

Realtek RTD2553V series products are all-in-one LCD monitor controllers supporting UXGA / WSXGA+ / WXGA+ / SXGA (optional), and integrate Realtek high performance ADC, TMDS Rx(optional),scaling engine, OSD engine, LVDS Tx, RSDS Tx and so on. Moreover, all products are pin compatible in QFP128-pin package to save cost and make the design easier.

2. RTD2120

This chip is the micro-processor of LCD monitor. It uses the design ware DW8051 of Synopsys as the 8051 core of this chip and is compatible with other industry 8051 series. Also, 96Kbyte FLASH with 8 bit bus is embedded in this chip which is licensed from TSMC 0.18um e-FLASH process. Here we use the package of PLCC44/LQFP48 if we would like to have a discrete MCU controller or we make a multi-chip package with our LCD monitor controller to form one chip package to save the cost of package and PCB material.

Analog EDID

Time: 13:26:13

Date: Thu Jun 08, 2006

VIEWSONIC CORPORATION

EDID Version # 1, Revision # 3

DDCTest For: ViewSonic VX2245wm

EDID Block 0, Bytes 0-127

128 BYTES OF EDID CODE:

	0	1	2	3	4	5	6	7	8	9
0	00	FF	FF	FF	FF	FF	FF	00	5A	63
10	1E	BB	01	01	01	01	01	10	01	03
20	0E	2F	1E	78	2E	F5	85	A4	58	49
30	9A	24	12	50	54	BF	EF	80	B3	00
40	A9	40	95	00	90	40	81	80	81	40
50	71	4F	01	01	21	39	90	30	62	1A
60	27	40	68	B0	36	00	DA	28	11	00
70	00	1C	00	00	00	FF	00	51	44	4F
80	30	36	30	31	30	30	30	30	31	0A
90	00	00	00	FD	00	32	4B	1E	52	0F
100	00	0A	20	20	20	20	20	20	00	00
110	00	FC	00	56	58	32	32	34	35	77
120	6D	0A	20	20	20	20	00	A9		

(08-09) ID Manufacturer Name ________________ = VSC

(11-10) Product ID Code ______________________ = BB1E

(12-15) Last 5 Digits of Serial Number ______ = Not Used

(16) Week of Manufacture _________________ = 01

(17) Year of Manufacture _________________ = 2006

(10-17) Complete Serial Number ______________ = See Descriptor Block

(18) EDID Version Number _________________ = 1

(19) EDID Revision Number ________________ = 3

(20) VIDEO INPUT DEFINITION:

Analog Signal

0.700, 0.300 (1.000 Vp-p)

Separate Syncs, Composite Sync, Sync on Green

(21) Maximum Horizontal Image Size ________________ = 470 mm

(22) Maximum Vertical Image Size __________________ = 300 mm

(23) Display Gamma ________________________________ = 2.20

(24) Power Management and Supported Feature(s):

Active Off/Very Low Power, Standard Default Color Space,

Preferred Timing Mode

Display Type = R/G/B Color

(25-34) CHROMA INFO:

Red X - 0.644 Green X - 0.286 Blue X - 0.143 White X - 0.313

Red Y - 0.347 Green Y - 0.603 Blue Y - 0.070 White Y - 0.329

(35) ESTABLISHED TIMING I:

720 X 400 @ 70Hz (IBM,VGA)

640 X 480 @ 60Hz (IBM,VGA)

640 X 480 @ 67Hz (Apple,Mac II)

640 X 480 @ 72Hz (VESA)

640 X 480 @ 75Hz (VESA)

800 X 600 @ 56Hz (VESA)

800 X 600 @ 60Hz (VESA)

(36) ESTABLISHED TIMING II:

800 X 600 @ 72Hz (VESA)

800 X 600 @ 75Hz (VESA)

832 X 624 @ 75Hz (Apple,Mac II)

1024 X 768 @ 60Hz (VESA)

1024 X 768 @ 70Hz (VESA)

1024 X 768 @ 75Hz (VESA)

1280 X 1024 @ 75Hz (VESA)

(37) Manufacturer's Reserved Timing:

1152 X 870 @ 75Hz (Apple,Mac II)

(38-53) Standard Timing Identification:

1680 X 1050 @60Hz

1600 X 1200 @60Hz

1440 X 900 @60Hz

1400 X 1050 @60Hz

1280 X 1024 @60Hz

1280 X 960 @60Hz

1152 X 864 @75Hz

Not Used

(54-71) Detailed Timing / Descriptor Block 1:

1680x1050 Pixel Clock: 146.25 MHz

Horizontal Image Size: 474 mm Vertical Image Size: 296 mm

Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:

Active Time: 1680 pixels	Blanking Time: 560 pixels
Sync Offset: 104 pixels	Sync Pulse Width: 176 pixels
Border: 0 pixels	Frequency: 65.29 KHz

Vertical:

Active Time: 1050 lines	Blanking Time: 39 lines
Sync Offset: 3 lines	Sync Pulse Width: 6 lines
Border: 0 lines	Frequency: 59.95 Hz

Digital Separate, Horizontal Polarity (-) Vertical Polarity (+)

(72-89) Detailed Timing / Descriptor Block 2:

Monitor Serial Number:
QDO060100001

(90-107) Detailed Timing / Descriptor Block 3:

Monitor Range Limits:
Min Vertical Freq - 50 Hz
Max Vertical Freq - 75 Hz
Min Horiz. Freq - 30 KHz
Max Horiz. Freq - 82 KHz
Pixel Clock - 150 MHz
Secondary GTF - Not Supported

(108-125) Detailed Timing / Descriptor Block 4:

Monitor Name:
VX2245wm

(126) No Extension EDID Block(s)
(127) CheckSum OK

Digital EDID

Time: 13:27:26

Date: Thu Jun 08, 2006

VIEWSONIC CORPORATION

EDID Version # 1, Revision # 3

DDCTest For: ViewSonic VX2245wm

EDID Block 0, Bytes 0-127

128 BYTES OF EDID CODE:

	0	1	2	3	4	5	6	7	8	9
0	00	FF	FF	FF	FF	FF	FF	00	5A	63
10	1E	BB	01	01	01	01	01	10	01	03
20	80	2F	1E	78	2E	F5	85	A4	58	49
30	9A	24	12	50	54	BF	EF	80	B3	00
40	A9	40	95	00	90	40	81	80	81	40
50	71	4F	31	0A	21	39	90	30	62	1A
60	27	40	68	B0	36	00	DA	28	11	00
70	00	1C	00	00	00	FF	00	51	44	4F
80	30	36	30	31	30	30	30	30	31	0A
90	00	00	00	FD	00	32	4B	1E	52	0F
100	00	0A	20	20	20	20	20	20	00	00
110	00	FC	00	56	58	32	32	34	35	77
120	6D	0A	20	20	20	20	00	FE		

(08-09) ID Manufacturer Name ________________ = VSC

(11-10) Product ID Code ______________________ = BB1E

(12-15) Last 5 Digits of Serial Number ______ = Not Used

(16) Week of Manufacture _________________ = 01

(17) Year of Manufacture _________________ = 2006

(10-17) Complete Serial Number ______________ = See Descriptor Block

(18) EDID Version Number _________________ = 1

(19) EDID Revision Number ________________ = 3

(20) VIDEO INPUT DEFINITION:

Digital Signal

Non - VESA DFP 1.x Compatible

(21) Maximum Horizontal Image Size ________________ = 470 mm

(22) Maximum Vertical Image Size __________________ = 300 mm

(23) Display Gamma ________________________________ = 2.20

(24) Power Management and Supported Feature(s):

Active Off/Very Low Power, Standard Default Color Space,

Preferred Timing Mode

Display Type = R/G/B Color

(25-34) CHROMA INFO:

Red X - 0.644 Green X - 0.286 Blue X - 0.143 White X - 0.313

Red Y - 0.347 Green Y - 0.603 Blue Y - 0.070 White Y - 0.329

(35) ESTABLISHED TIMING I:

720 X 400 @ 70Hz (IBM,VGA)

640 X 480 @ 60Hz (IBM,VGA)

640 X 480 @ 67Hz (Apple,Mac II)

640 X 480 @ 72Hz (VESA)

640 X 480 @ 75Hz (VESA)

800 X 600 @ 56Hz (VESA)

800 X 600 @ 60Hz (VESA)

(36) ESTABLISHED TIMING II:

800 X 600 @ 72Hz (VESA)

800 X 600 @ 75Hz (VESA)

832 X 624 @ 75Hz (Apple,Mac II)

1024 X 768 @ 60Hz (VESA)

1024 X 768 @ 70Hz (VESA)

1024 X 768 @ 75Hz (VESA)

1280 X 1024 @ 75Hz (VESA)

(37) Manufacturer's Reserved Timing:

1152 X 870 @ 75Hz (Apple,Mac II)

(38-53) Standard Timing Identification:

1680 X 1050 @60Hz

1600 X 1200 @60Hz

1440 X 900 @60Hz

1400 X 1050 @60Hz

1280 X 1024 @60Hz

1280 X 960 @60Hz

1152 X 864 @75Hz

640 X 400 @70Hz

(54-71) Detailed Timing / Descriptor Block 1:

1680x1050 Pixel Clock: 146.25 MHz

Horizontal Image Size: 474 mm Vertical Image Size: 296 mm

Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:

Active Time: 1680 pixels **Blanking Time: 560 pixels**

Sync Offset: 104 pixels **Sync Pulse Width: 176 pixels**

Border: 0 pixels **Frequency: 65.29 KHz**

Vertical:

Active Time: 1050 lines **Blanking Time: 39 lines**

Sync Offset: 3 lines **Sync Pulse Width: 6 lines**

Border: 0 lines **Frequency: 59.95 Hz**

Digital Separate, Horizontal Polarity (-) Vertical Polarity (+)

(72-89) Detailed Timing / Descriptor Block 2:

Monitor Serial Number:

QDO060100001

(90-107) Detailed Timing / Descriptor Block 3:

Monitor Range Limits:

Min Vertical Freq - 50 Hz

Max Vertical Freq - 75 Hz

Min Horiz. Freq - 30 KHz

Max Horiz. Freq - 82 KHz

Pixel Clock - 150 MHz

Secondary GTF - Not Supported

(108-125) Detailed Timing / Descriptor Block 4:

Monitor Name:

VX2245wm

(126) No Extension EDID Block(s)

(127) CheckSum OK

5. Adjustment Procedure

A. Function Test and Alignment Procedure

1. All Modes Reset

You should do "All Model Reset" (Refer to Chap 3. Hot Keys for Function Controls) first. This action will allow you to erase all end-user's settings and restore the factory defaults.

2. Auto Image Adjust

The Auto Adjust is aimed to offer a best screen quality by built-in ASIC. For optimum screen quality, the user has to adjust each function manually.

A.Turn the computer and LCD monitor on.

B. Press the '**Auto**' button on monitor keypad to Auto Adjust.

C. The LCD monitor will start the Auto Adjust process automatically and run for 10 consecutive seconds, during which time you will notice the image change.

3. Firmware

Test Patten: Burn in Model (Refer to Chap3. Hot Keys for Function Control)

-Make sure the F/W is the latest version.

4. DCC

Test Patten: EDID program

-Make sure it can pass test program.

5. Window Shut Down

Test Signal: <u>1280*1024@60Hz</u>

Test Pattern:



Checkered Pattern Every One Pixel (50%Green & 50%Blue)

Inspection Item: Flicker, Mura

6. Window BG

Test Signal: <u>1280*1024@60Hz</u>

Test Pattern:



Window standard pattern

Inspection Item: Line Defect, Function Defect & Mura

7. 25 Gray

Test Signal: **1280*1024@60Hz**

Test Pattern:



Full Screen 25% White (Gray)

Inspection Item: Particle, Line Defect & Mura

8. 50 Gray

Test Signal: **1280*1024@60Hz**

Test Pattern:



Full Screen 50% White (Gray)

Inspection Item: Bright Dot, Particle, Line Defect & Mura

9. White Box

Test Signal: **1280*1024@60Hz**

Test Pattern:



Window standard pattern

Inspection Item: Particle, Line Defect, Power, Image Remain & Mura

10. Black Box

Test Signal: **1280*1024@60Hz**

Test Pattern:



Window standard pattern

Inspection Item: Bright Dot, Line Defect & Power

11. RED

Test Signal: **1280*1024@60Hz**

Test Pattern:



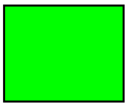
Full Screen Red

Inspection Item: Bright Dot, Partial & Line Defect

12. Green

Test Signal: 1280*1024@60Hz

Test Pattern:



Full Screen Green

Inspection Item: Bright Dot, Partial & Line Defect

13. Blue

Test Signal: 1280*1024@60Hz

Test Pattern:



Full Screen Green

Inspection Item: Bright Dot, Partial & Line Defect

14. Gray_Scale_0-100_V64

Test Signal: 1280*1024@60Hz

Test Pattern:



Vertical 64 (256) Gray Scale (Right → Left，From 0 to 100% White)

Inspection Item: Line Defect & Function Defect

15. Function Test Display pattern

Item	Pattern	Description	Remark
1	Gray_Scale_0-100_V	Vertical 64 (256) Gray Scale (右→左，From 0 to 100% White)	Figure 1
2	Gray_Scale_0-100_H	Horizontal 64 (256) Gray Scale (上→下，From 0 to 100% White)	Figure 2
3	Black	Full Screen Black	Figure 3
4	Red	Full Screen 50% Red	Figure 4
5	Green	Full Screen 50% Green	Figure 5
6	Blue	Full Screen 50% Blue	Figure6
7	White	Full Screen White	Figure7
8	Black_Tile	Black Tile Under White Background	Figure 8

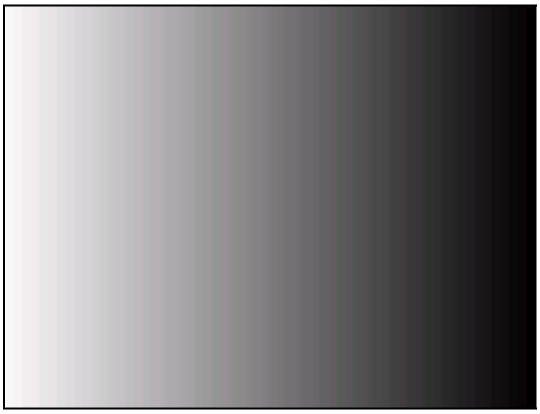


Figure 1

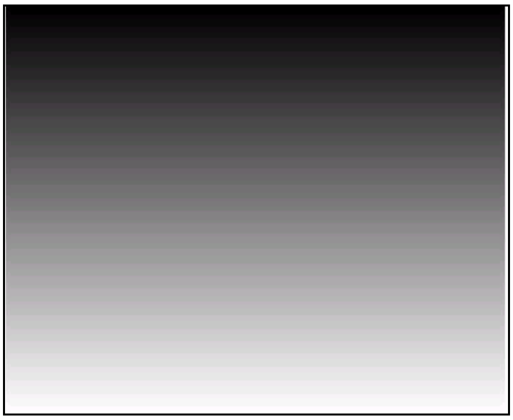


Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7

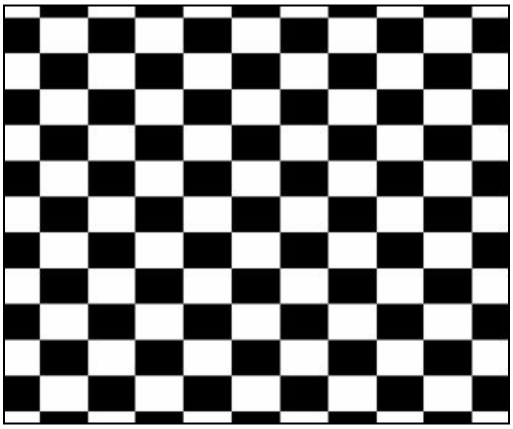


Figure 8

BIOS update procedure

1. To setup ISP environment

Hardware:

PC or Notebook , Parallel(Printer) cable , ISP tool(Fig 1)

Software:

ISP driver .

If the O.S. was Win2000 or Win XP please have to install



Fig1

PORT95NT.exe

In order to ensure can execute ISP program, please set BIOS in PC or Notebook as Fig 2

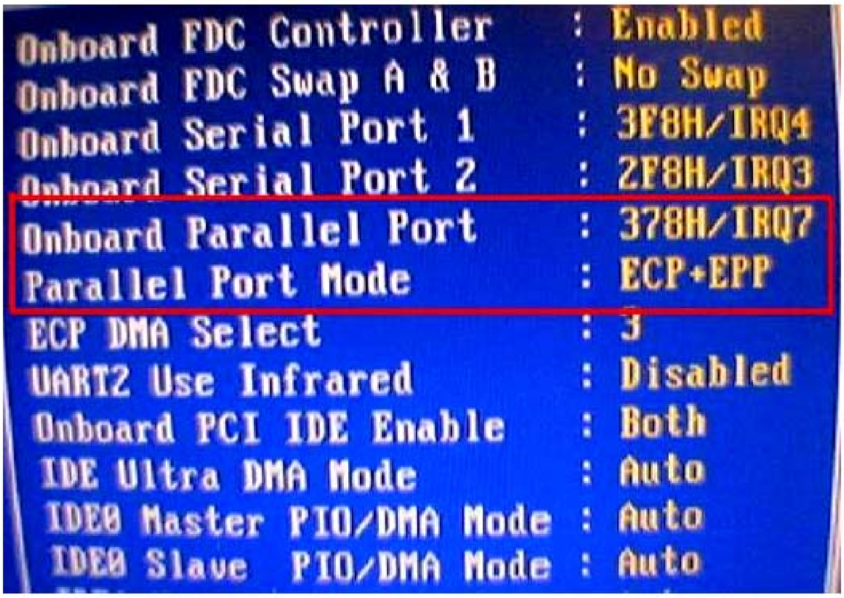


Fig 2

2. Install ISP

2.1 User could download ISP driver and PORT95NT install file from Myson Century website(//www.myson.com.tw)

2.2 After extracting the zip file, the total files list as Fig 2.2, and double click the file of setup.exe to install.



Fig 2.2

2.3 Press "Next" button to continue., see Fig 2.3

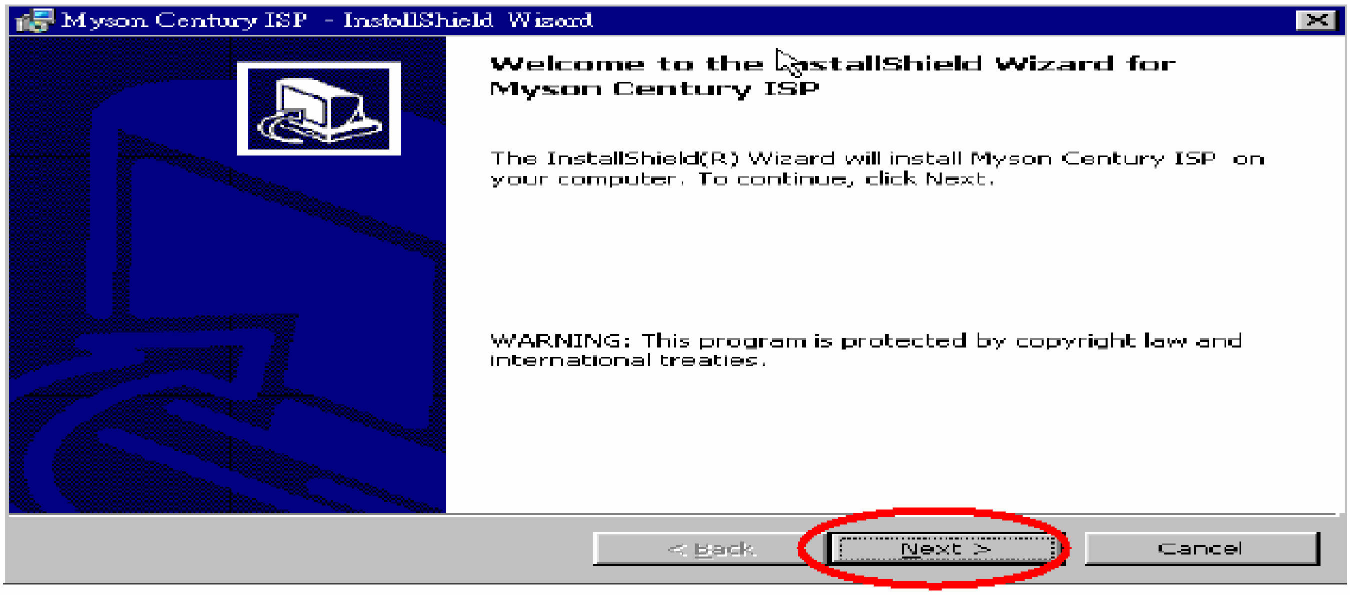


Fig 2.3

2.4 Keep default setting or press "Change" button for selecting the path that you want , and then press "Next" button to continue, see Fig 2.4.

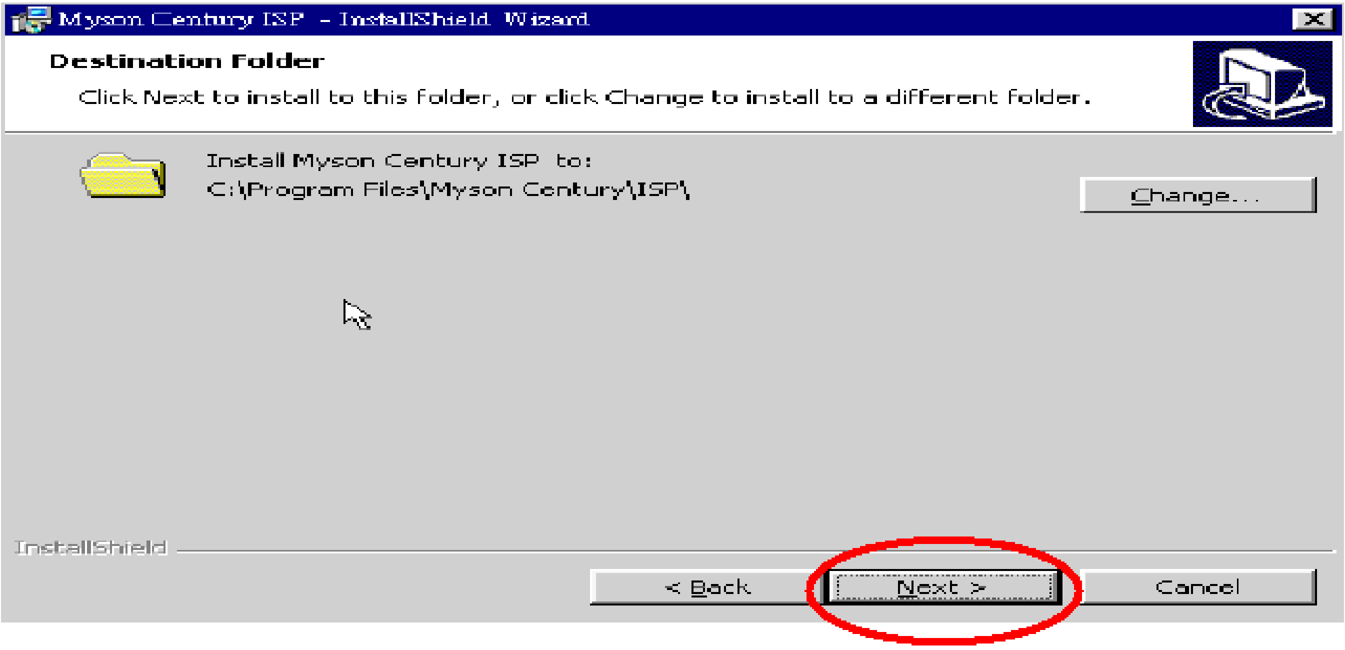


Fig 2.4

2.5 Press "Install" button to continue, see Fig 2.5

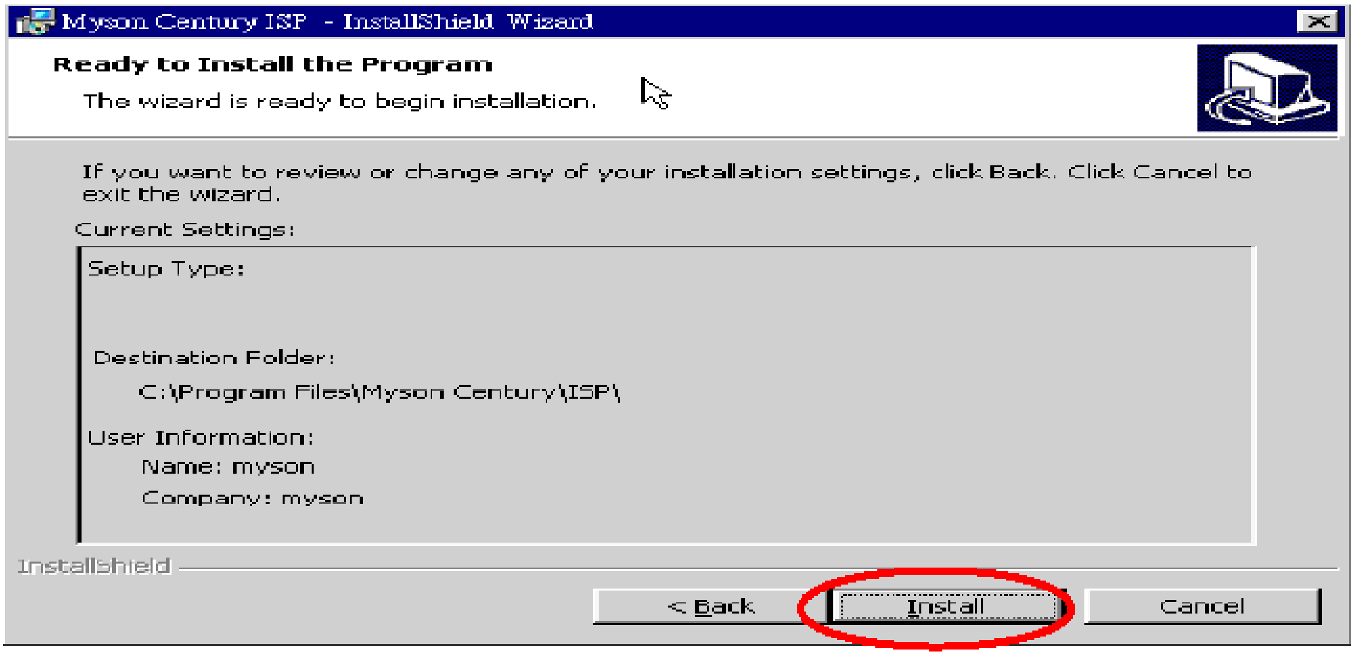


Fig 2.5

2.6 The Installer Information shows package warning, press "Ignore" button to continue, see Fig 2.6.

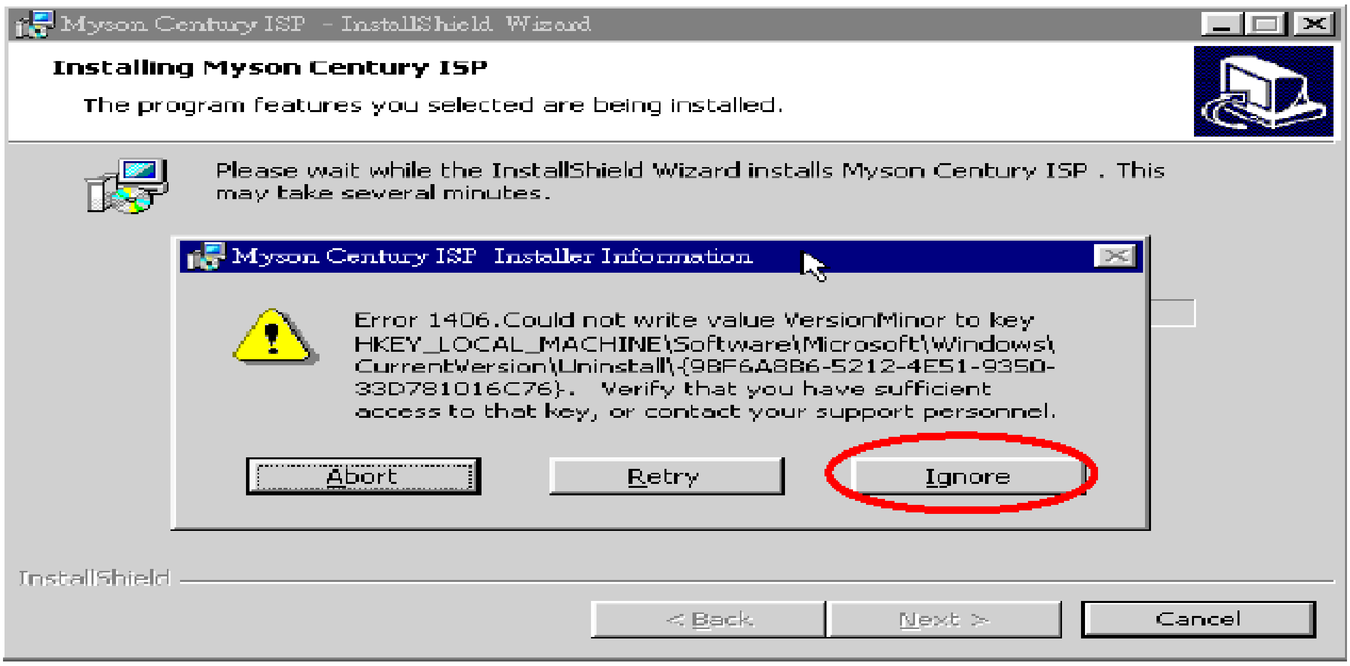


Fig 2.6

2.7 Installation has finished, press "Finish" button, see Fig 2.7.

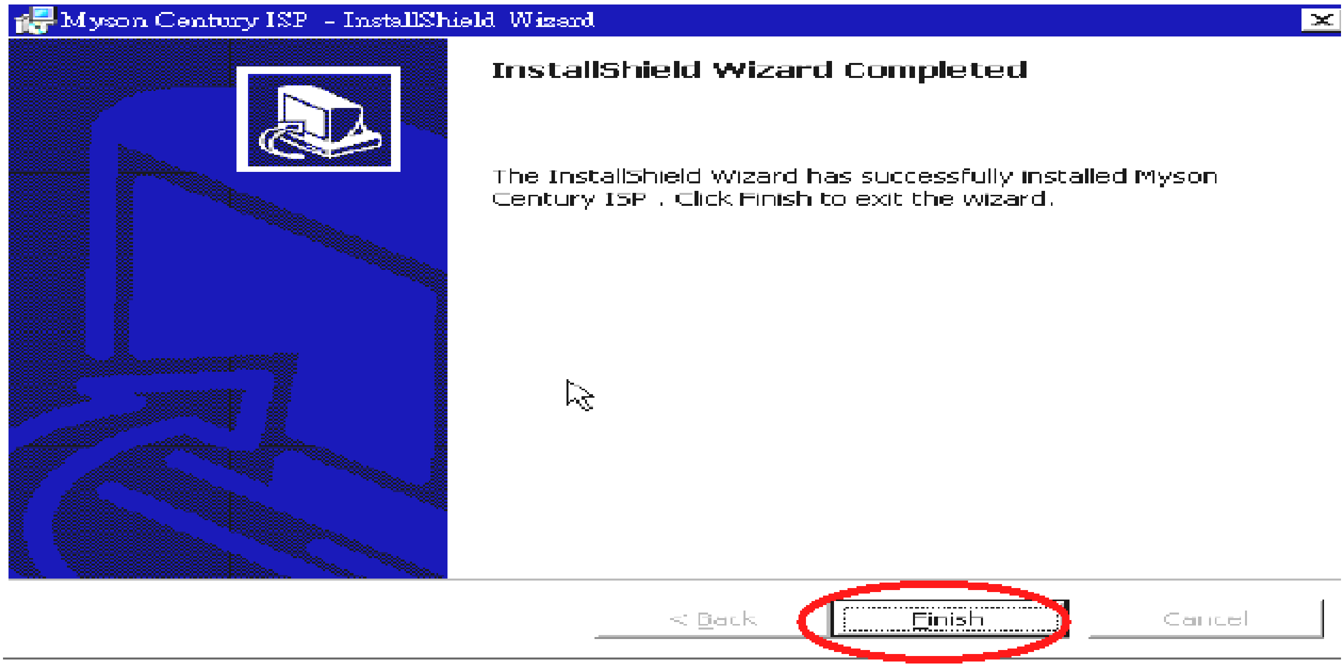


Fig 2.7

3. ISP security code

3.1 After installation, we could find the shortcut in the setting path or the program bar (default setting), see Fig 3.1.

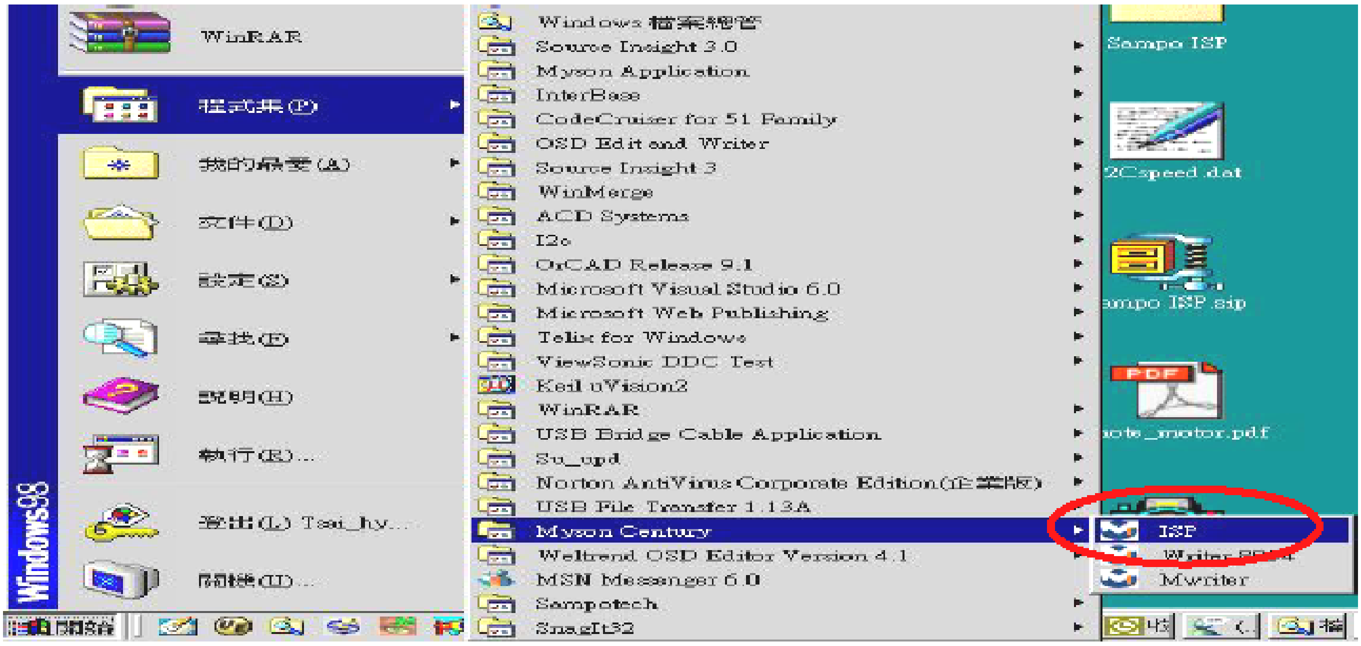


Fig 3.1

2.2 Security file is a key to use ISP function, press “確定” button, see Fig 3.2.

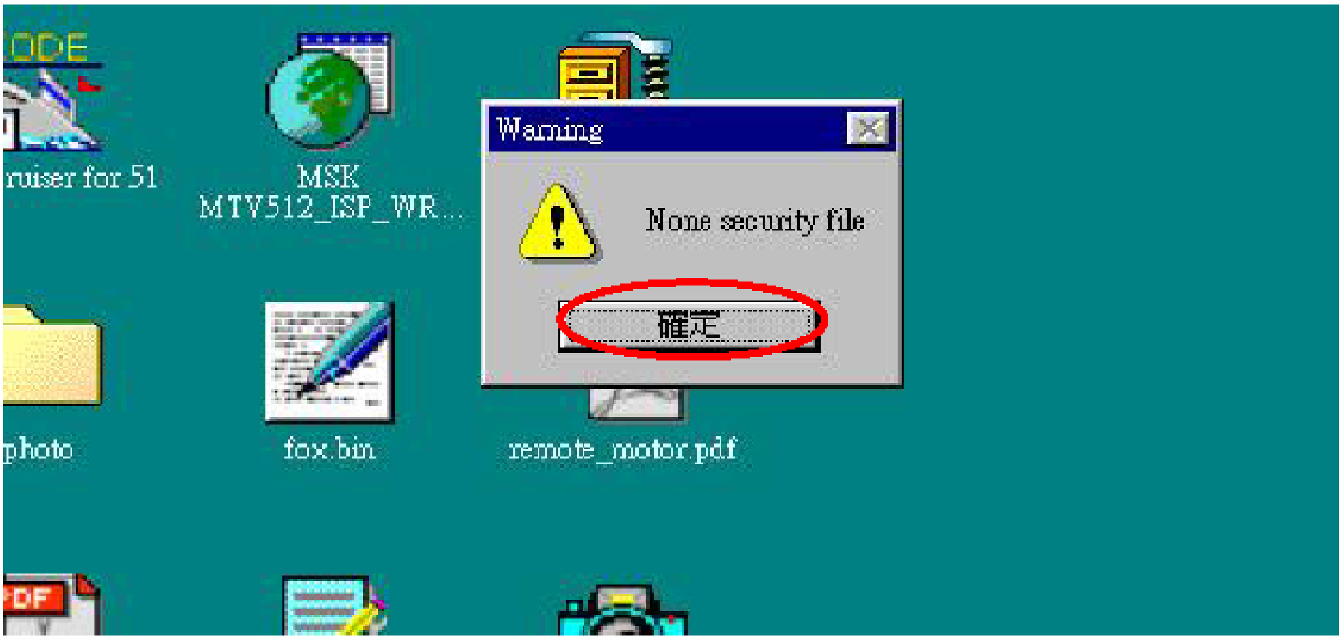


Fig 3.2

3.3 The warning is used to remind user of that different CPU rate may cause ISP function fail(it is limited by IIC protocol), press "確定" button, see Fig 3.3.

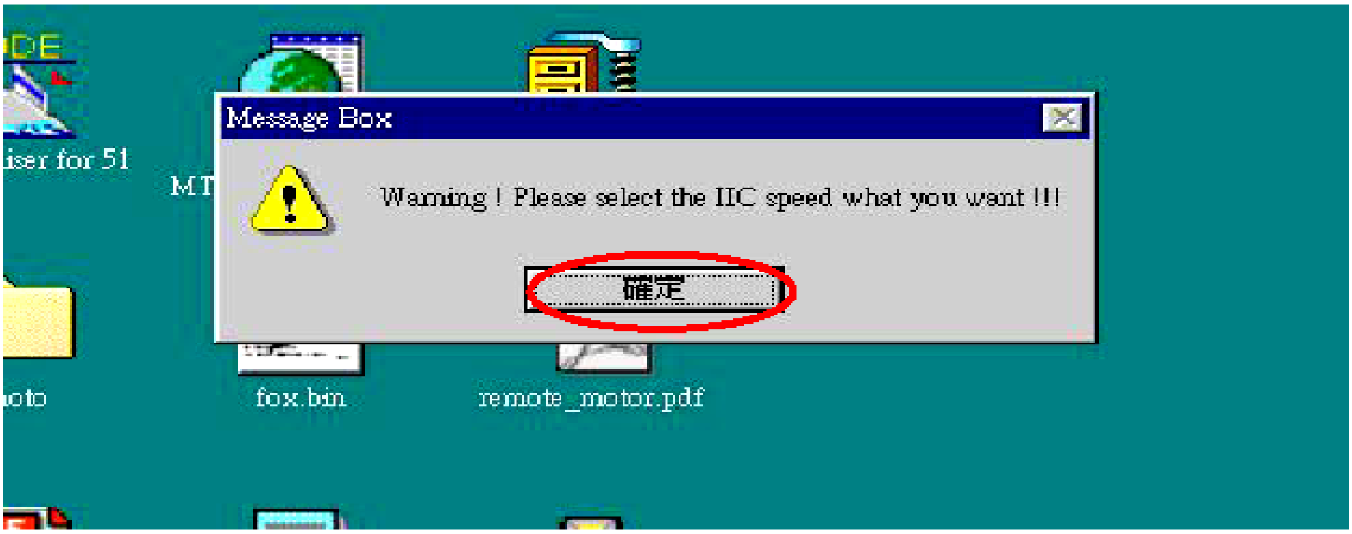


Fig 3.3

2.4 Press "Create Security File" button to key in **security code**. Adjusting bar to decrease **speed of IIC bus**, see Fig 3.4.

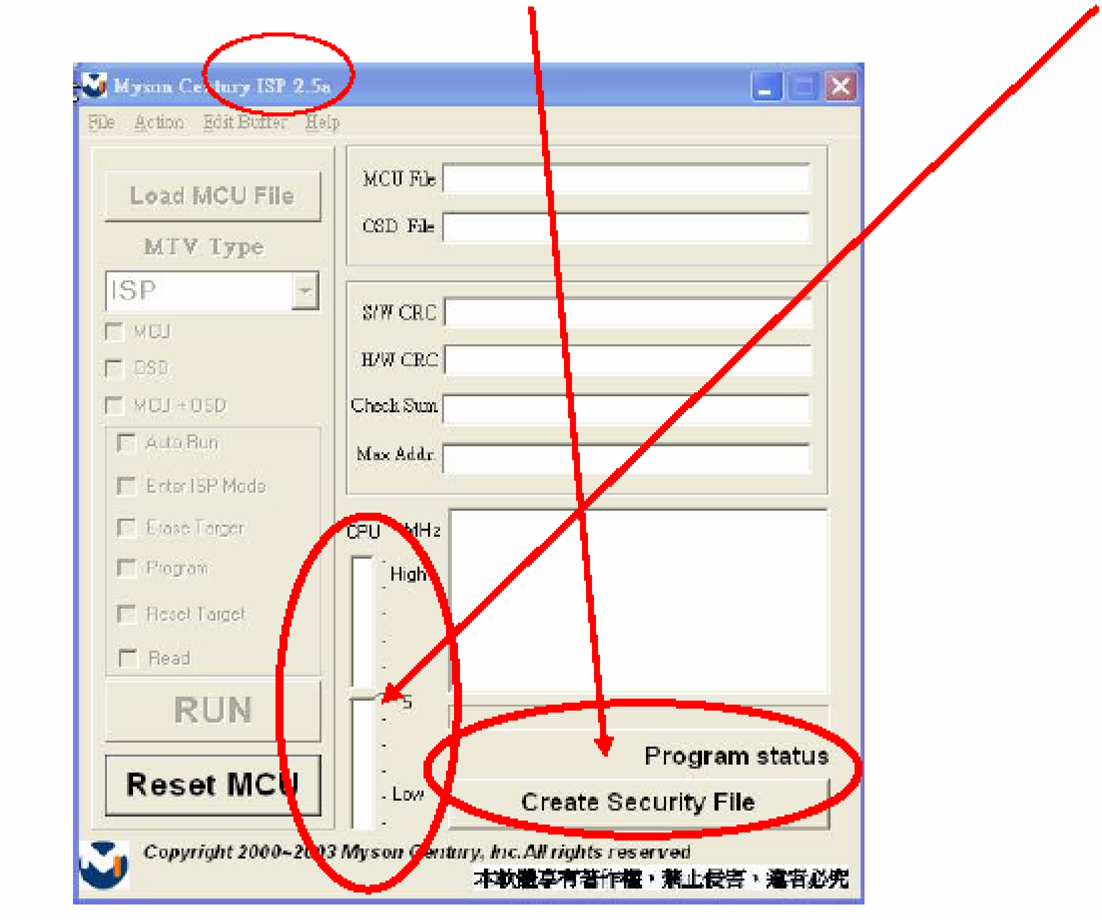


Fig 3.4

3.5 At least 2 Command No of security code, see Fig 3.5, and different security code between hardware ISP and software ISP. The security code of software ISP is set by user while coding, but the security code of hardware ISP is set by Myson Century.

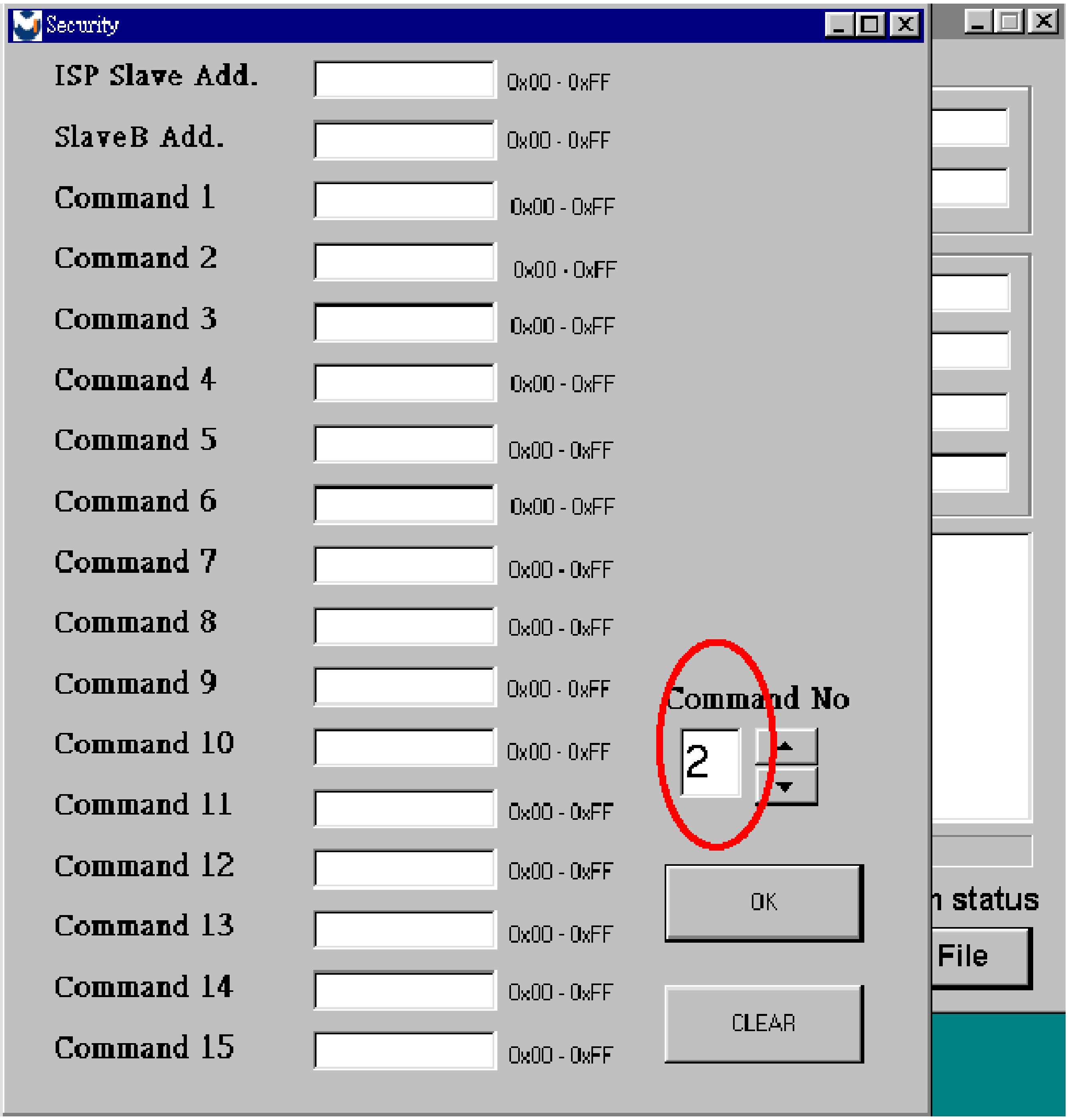


Fig 3.5

3.6 Fig 3.6 shows the setting for security code of **hardware ISP**, it needs **4** Command No, and key in command sequentially for **94, 94, AC, CA, 53**.

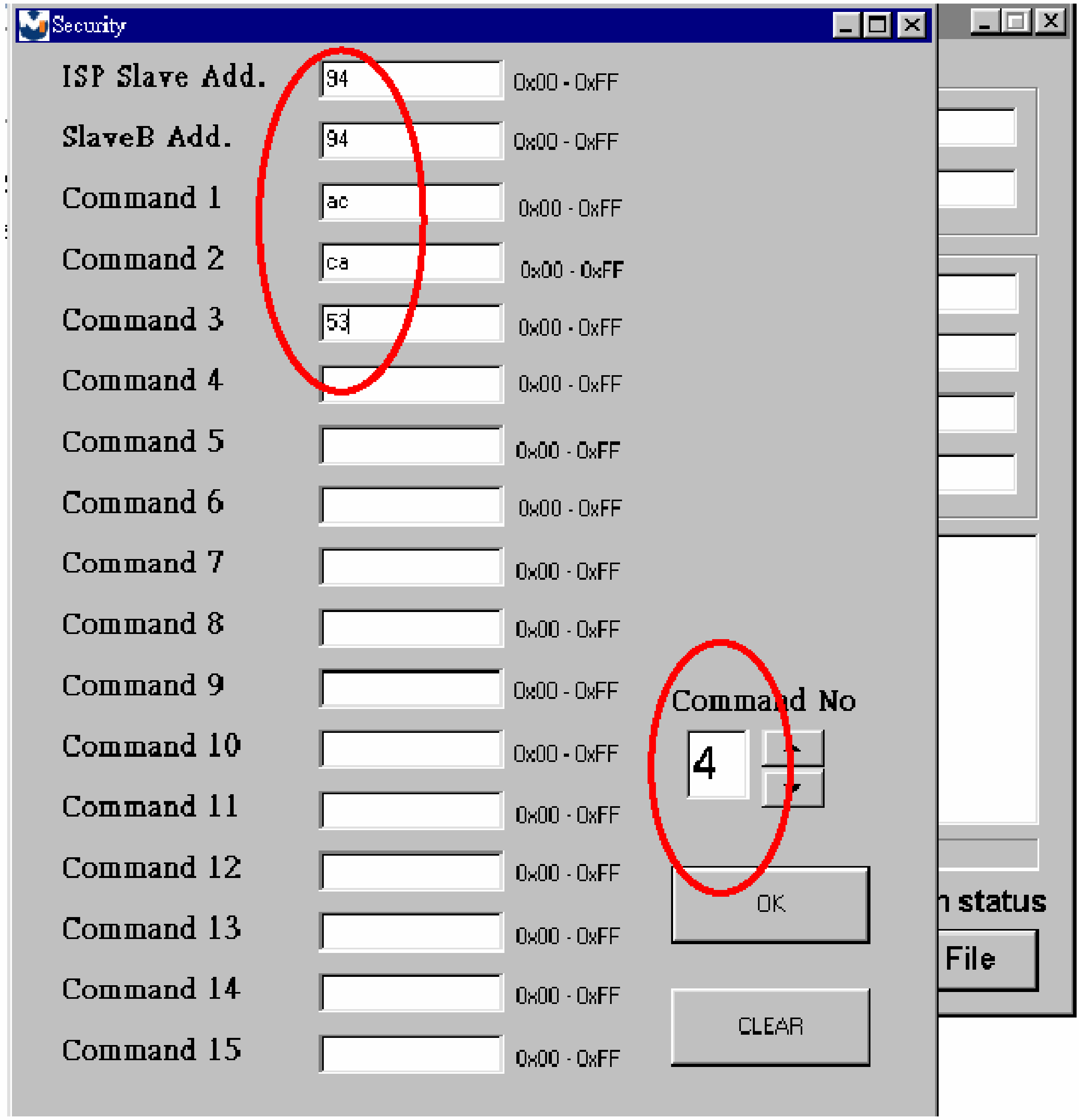


Fig 3.6

3.7 Fig 3.7 shows the setting for security code of **software ISP**, it needs **2** Command No, and key in command sequentially for **7C, 4C, 77**. The Command No and command must be set by user while coding. About the detail of setting, please refer to Section 6 Boot code of ISP.

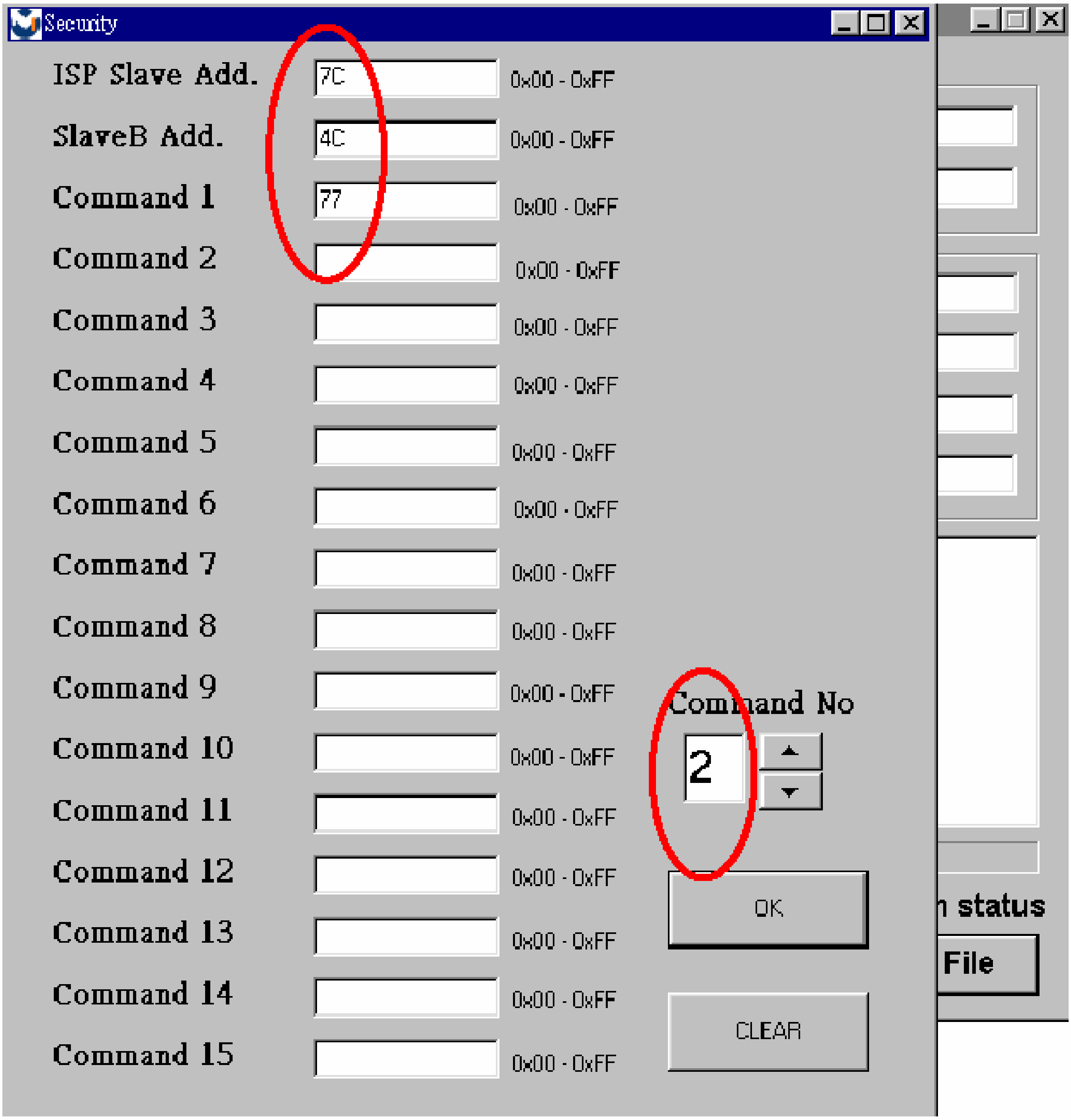


Fig 3.7

4. Use ISP to program MCU

4.1 Select MTV type first, load the binary or Intel hex file that you want to program into the MCU, and select "Auto" item, then press "RUN" button, see Fig 4.1.

4.2 If user changes the MTV type, it must load file again, or the buffer of load file will be cleared.

4.3 CRC (cyclic redundancy check): the host can check CRC register's result instead of reading every byte in flash. The message of Check MCU CRC OK means that the Host verify ok for the progress of program.

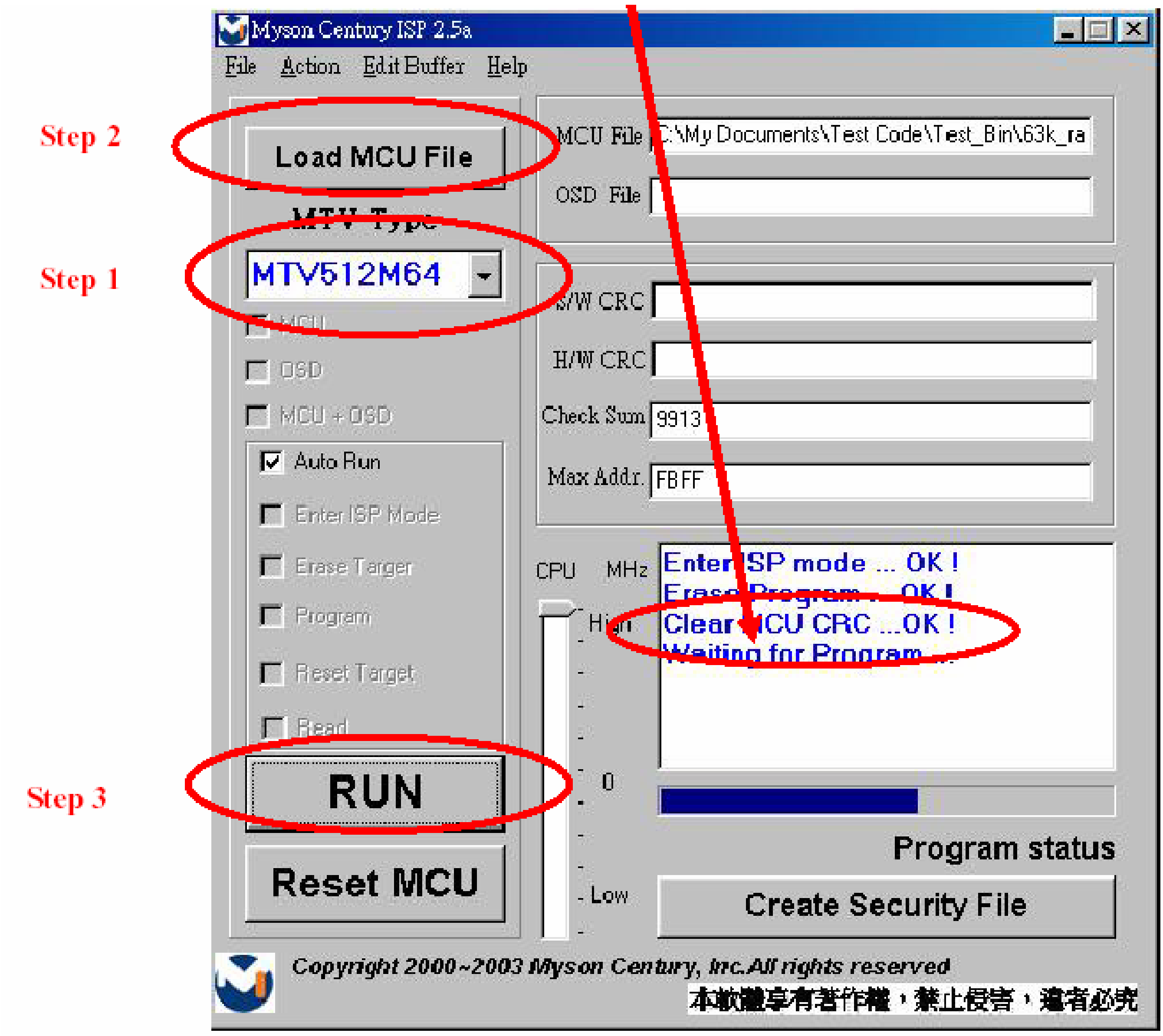
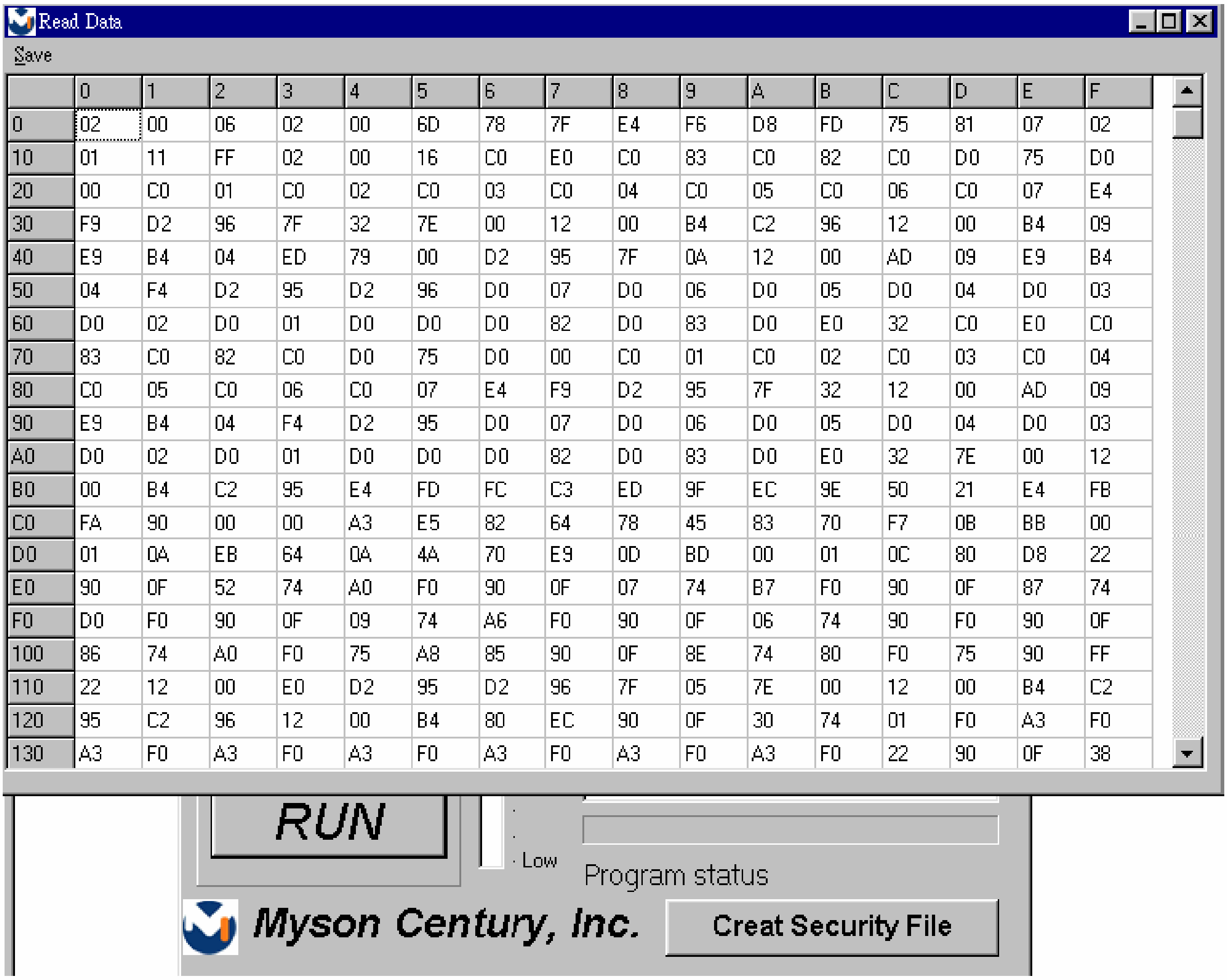


Fig 4.1

5 Use ISP to read MCU content

5.1 Only software ISP could read the MCU content, it is according to program the boot code while coding. The limitation is used for the security of customer' s code. Select "Read Target" item, and press "RUN" button, the MCU content will show as Fig 5.1.



	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	02	00	06	02	00	6D	78	7F	E4	F6	D8	FD	75	81	07	02
10	01	11	FF	02	00	16	C0	E0	C0	83	C0	82	C0	D0	75	D0
20	00	C0	01	C0	02	C0	03	C0	04	C0	05	C0	06	C0	07	E4
30	F9	D2	96	7F	32	7E	00	12	00	B4	C2	96	12	00	B4	09
40	E9	B4	04	ED	79	00	D2	95	7F	0A	12	00	AD	09	E9	B4
50	04	F4	D2	95	D2	96	D0	07	D0	06	D0	05	D0	04	D0	03
60	D0	02	D0	01	D0	D0	D0	82	D0	83	D0	E0	32	C0	E0	C0
70	83	C0	82	C0	D0	75	D0	00	C0	01	C0	02	C0	03	C0	04
80	C0	05	C0	06	C0	07	E4	F9	D2	95	7F	32	12	00	AD	09
90	E9	B4	04	F4	D2	95	D0	07	D0	06	D0	05	D0	04	D0	03
A0	D0	02	D0	01	D0	D0	D0	82	D0	83	D0	E0	32	7E	00	12
B0	00	B4	C2	95	E4	FD	FC	C3	ED	9F	EC	9E	50	21	E4	FB
C0	FA	90	00	00	A3	E5	82	64	78	45	83	70	F7	0B	BB	00
D0	01	0A	EB	64	0A	4A	70	E9	0D	BD	00	01	0C	80	D8	22
E0	90	0F	52	74	A0	F0	90	0F	07	74	B7	F0	90	0F	87	74
F0	D0	F0	90	0F	09	74	A6	F0	90	0F	06	74	90	F0	90	0F
100	86	74	A0	F0	75	A8	85	90	0F	8E	74	80	F0	75	90	FF
110	22	12	00	E0	D2	95	D2	96	7F	05	7E	00	12	00	B4	C2
120	95	C2	96	12	00	B4	80	EC	90	0F	30	74	01	F0	A3	F0
130	A3	F0	A3	F0	A3	F0	A3	F0	A3	F0	A3	F0	22	90	0F	38

Fig 5.1

5.2 If user uses hardware ISP to read MCU content, it shows as Fig 5.2.

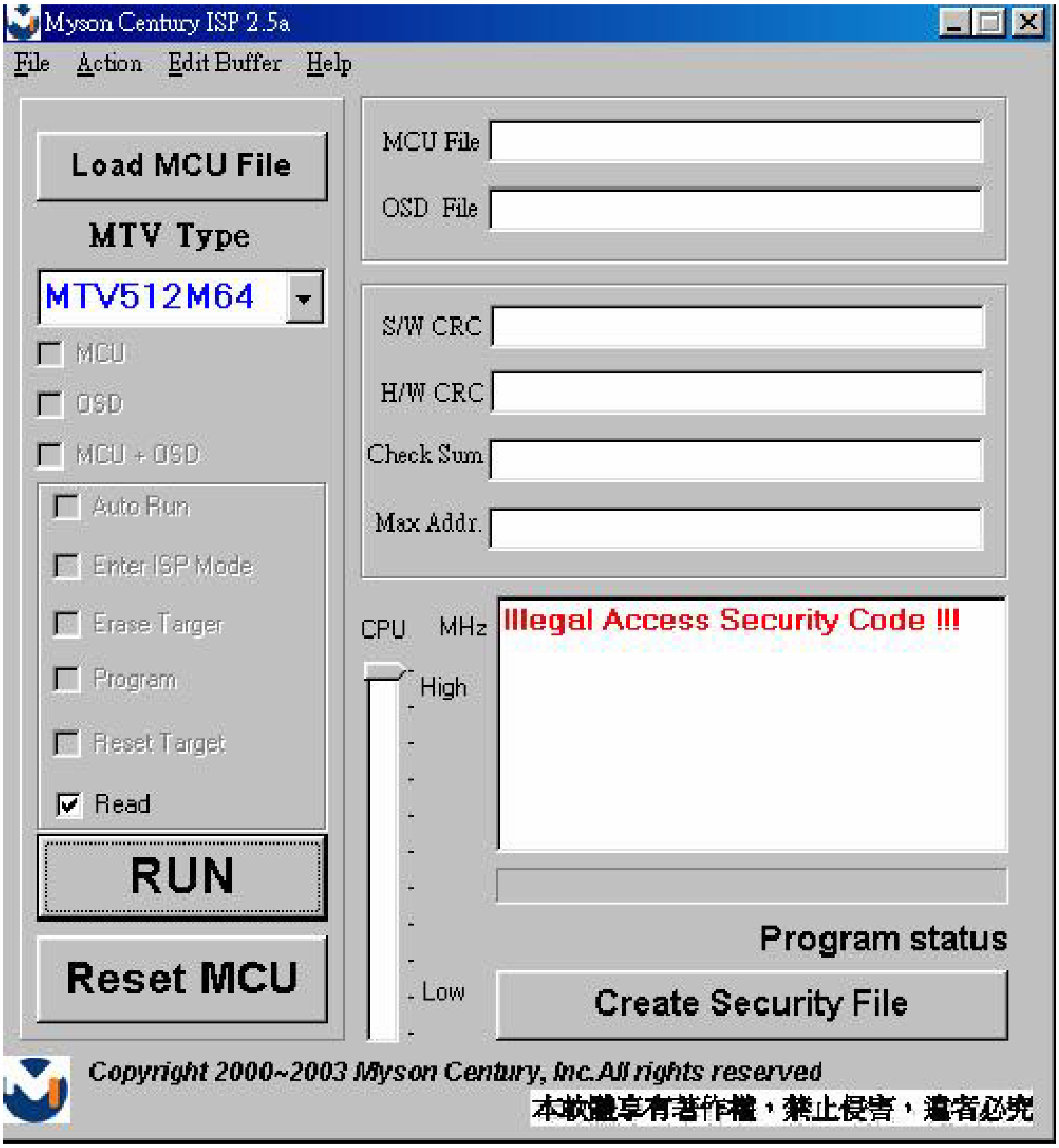
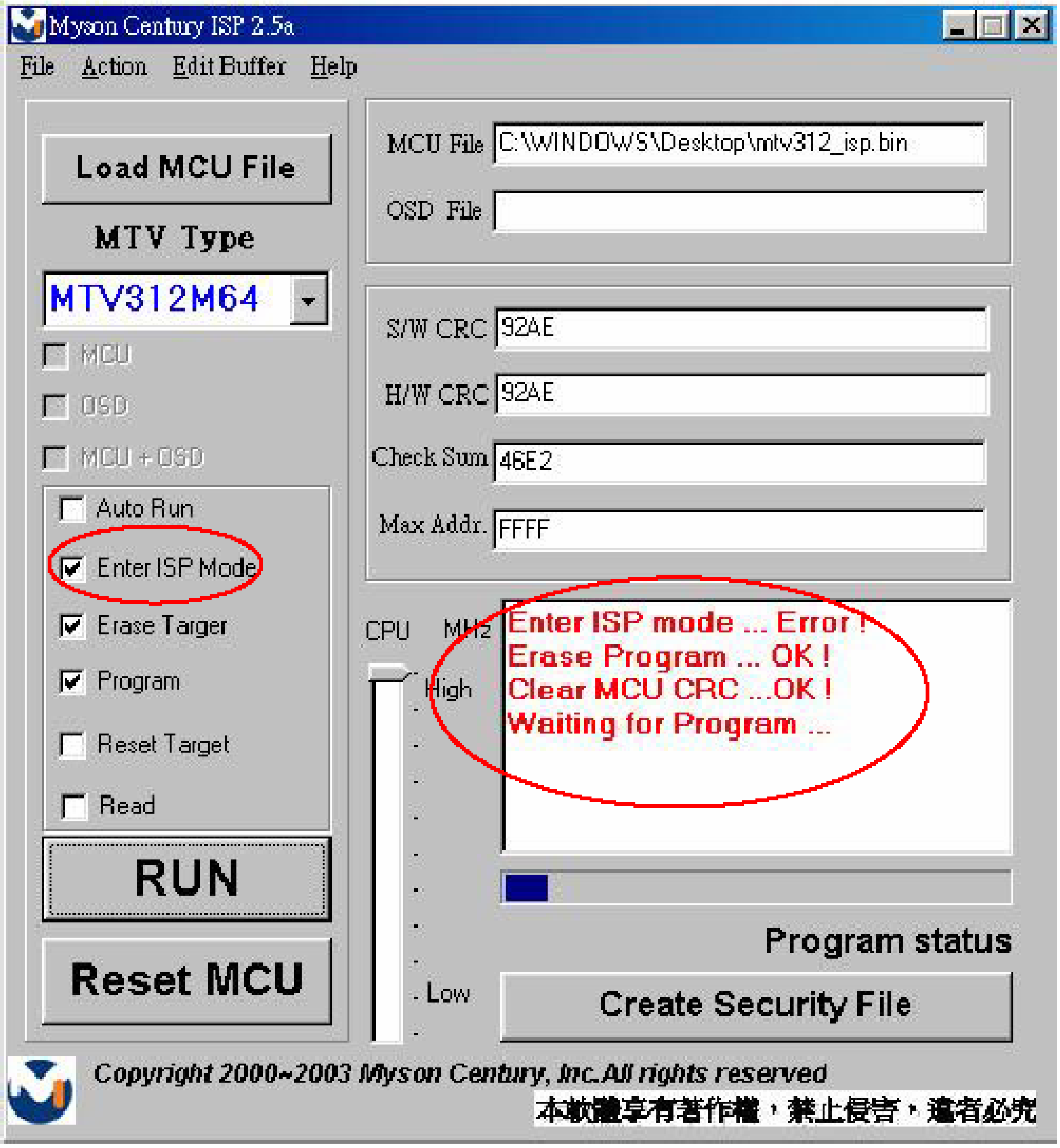
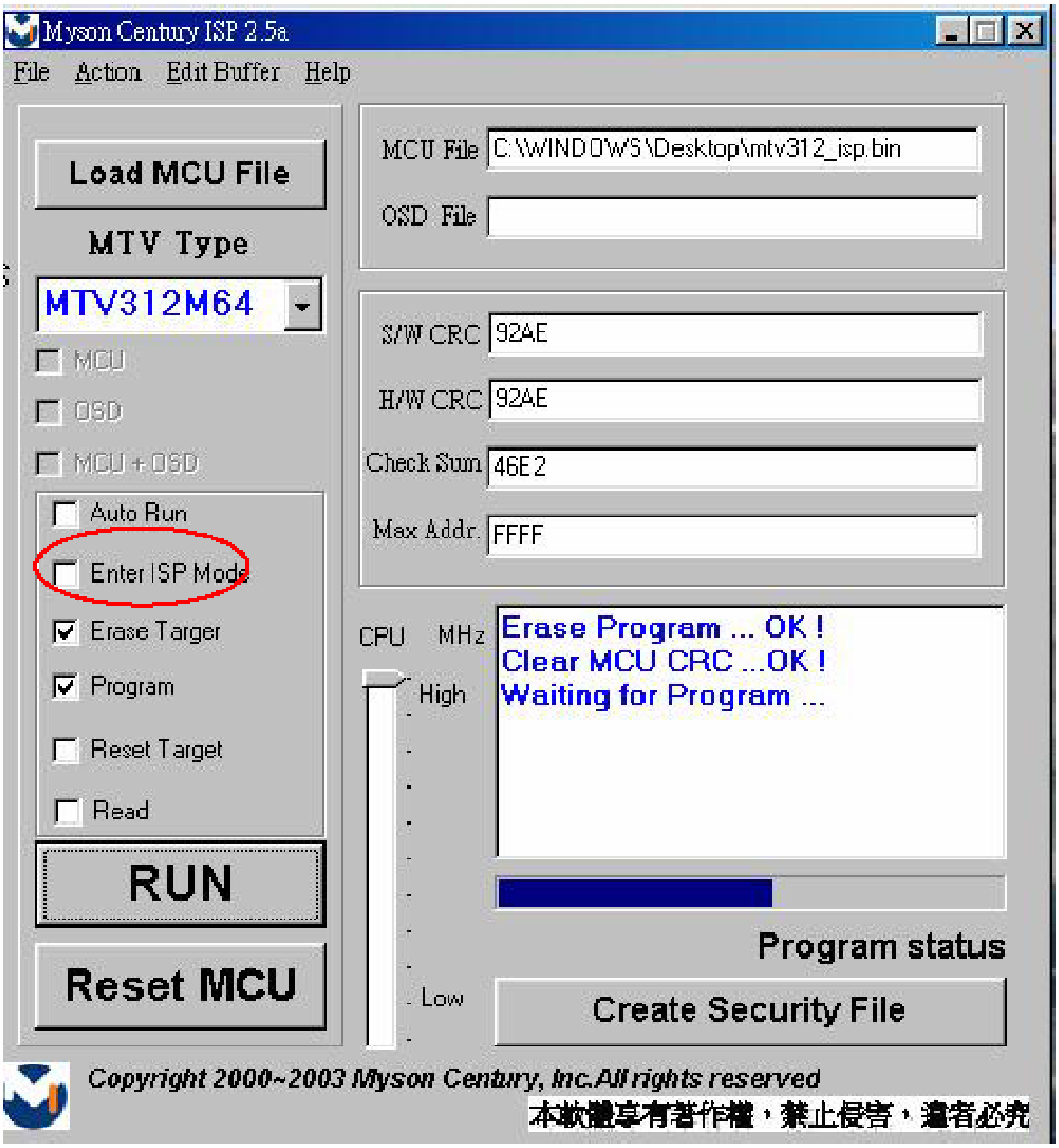


Fig 5.2

6 Re-entry the ISP Mode

When you could not select or click '**Reset MCU**' button and enter ISP mode again, you refer the message as below:





Note:

(1)Disable the 'Enter ISP Mode' option to avoid the error message display.

(2)If you using the MTV312M64 or before MCU serials, the MCU will always in 'ISP Mode'even programming fail or erase MCU that instead of select or press 'Reset MCU'.

7. Boot code of ISP

7.1 Hardware ISP

(1) Without boot code

(2) Fixed security code: 94, 94, AC, CA, 53

(3) Attention to the pin of HSCL (1) and HSDA (1) should keep in enable

(4) MTV412M, MTV512M, CS8954 support hardware ISP

7.2 Software ISP

(1) With boot code

(2) User define the security code

(3) Attention to the pin of HSCL (1) and HSDA (1) should keep in enable

(4) Only software ISP could read the MCU content

(5) MTV212M, MTV312M, MTV230M, MTV412M, MTV512M, CS8954 support software ISP

7.3 Boot code of software ISP

(1) Initialize MCU

(a) Define the I/O pin to HSCL (1) and HSDA (1)

(b) Define the slave B address

(c) Enable 8051 INT1 (ISR 2)

(2) Coding for INT1 while get into ISP mode

(a) Clear watchdog to prevent reset during ISP period

(b) Disable all interrupt to prevent CPU wake-up

(c) Write ISP slave address

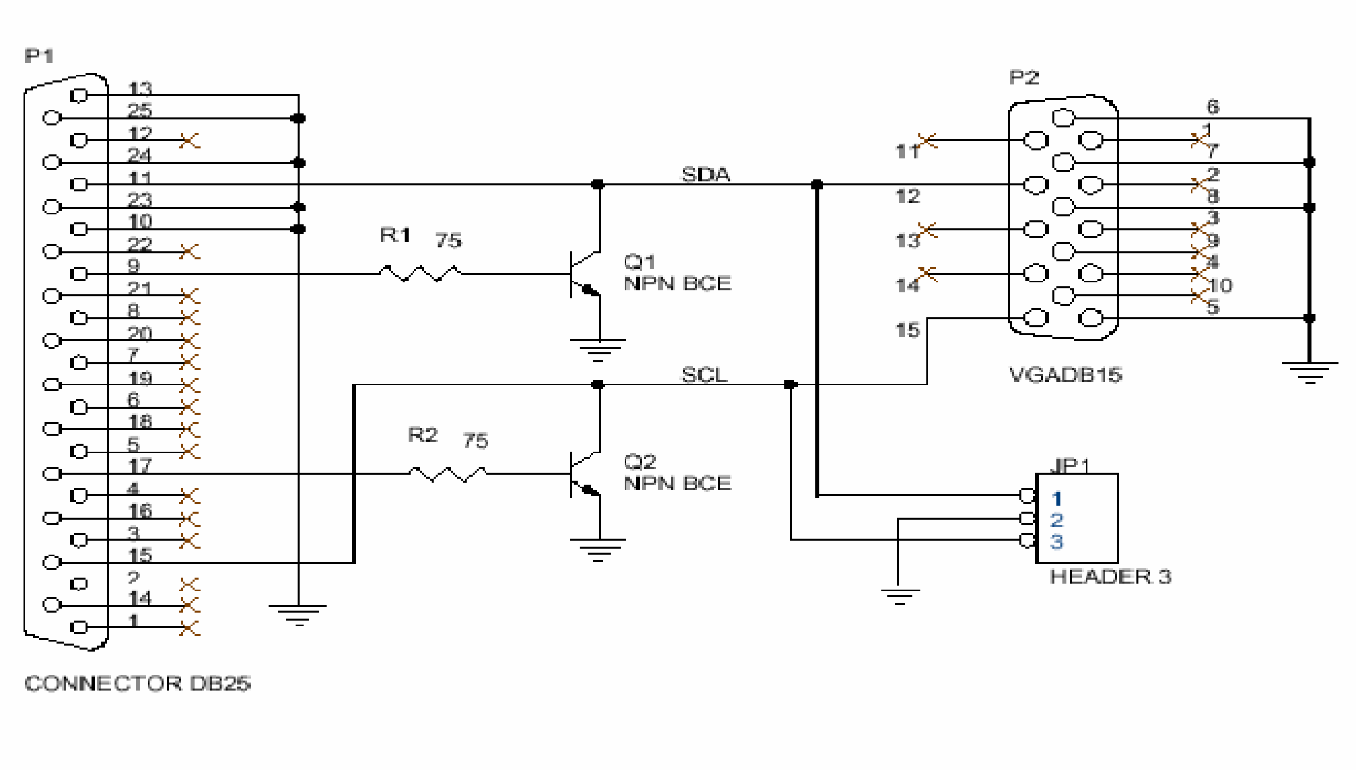
(d) Write 93h to ISP enable address to enable ISP

(e) Enter 8051 idle mode

7.4 The followings show the relationship between the code and the security code.



8. ISP Adaptor Schematic



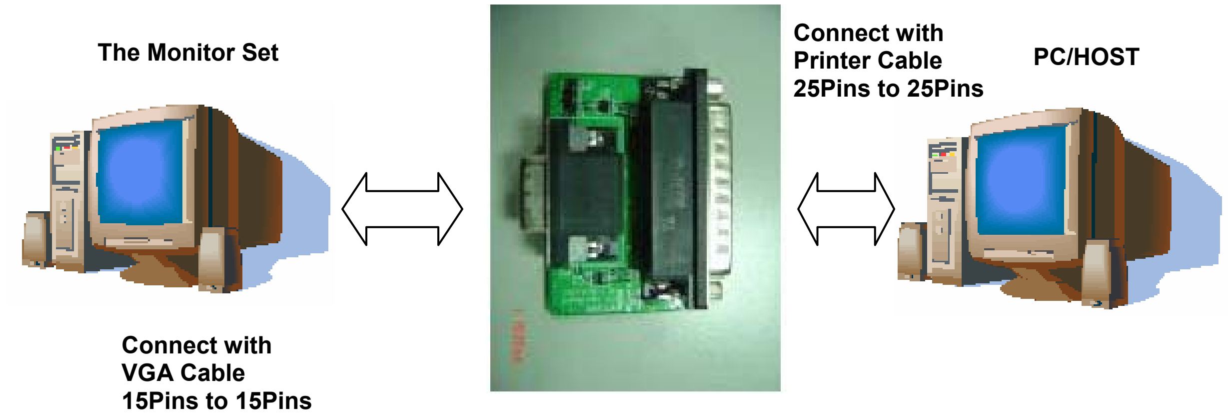
9. Adaptor Linking

ISP Adaptor

The Monitor Set

Connect with Printer Cable 25Pins to 25Pins

PC/HOST



Connect with VGA Cable 15Pins to 15Pins

Packing For Shipping And Disassembly Procedure

Packing For Shipping

1. Packing Procedure

1.1 Paste protection film to protect the monitor. (Figure 1)

1.2 Put the monitor in the PE bag and seal the bag with tape. (Figure 2)



Figure 1



Figure 2

1.3 Put the cushion into the carton then place the monitor on the cushion. (Figure 3)

1.4 Join the cushions to the monitor then place all the accessories into the carton. As last, close the carton and seal it with tape. (Figure 4)



Figure 3



Figure 4

Monitor Assembly and Disassembly

1 Separate Stand Assy

1 Remove Stand Cover

Step 1 :

Remove the Stand Covers.



Step 2 :

Loose and remove 6 screws



Step4 :

Remove the Stand Assy



Step 5 :

Completed.

2 Separate Rear Cover (Rear Case Assy)

Separate Bezel hooks to take Bezel and Rear Cover apart.

Step 1 :

Loose and remove 3 screws.



Step 2 :

Separate Bezel hooks to take
Bezel and Rear Cover apart.



Step 3 :

Remove Rear Cover.



Step 4 :

Completed.

3 Remove Power Board and AD Board

3.1 Remove Metal Cover

Step 1 :

Remove FFC from OSD Board.



Step 2 :

Lift up LCD module and remove bezel.



Step 3 :

Remove 4 pieces of Backlight wires.



Step 4 :

Loose and remove 4 screws.



Step 5 :

Loose and remove 2 screws.



Step 6 :

Loose and remove 4 screws.



Step 7 :

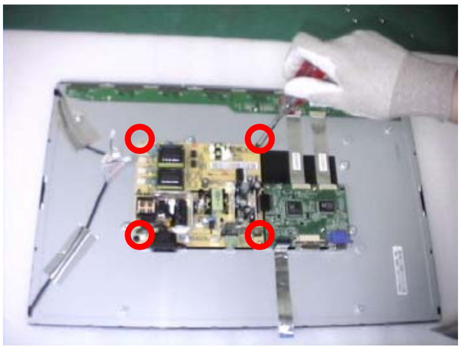
Remove the PCBA Cover



3.2 Remove Power Board and AD Board

Step 1 :

Loose and remove 4 screws.



Step 2 :

Remove Lips Board



Step 3 :

Remove 2 pieces of FFCs.



Step 4 :

Remove the FFC.



Step 5 :

Loose and remove 4 screws.



Step 6 :

Remove AD PCBA.



Step7 :

Completed.

4 Change New AD Board and Power Board

Step 1 :

Place new AD Board.

And fasten 4 fixed screws.



Step 2 :

Fasten 4 fixed screws.



Step 3 :

Insert FFC.



Step 4 :

Insert 2 pieces of FFCs .

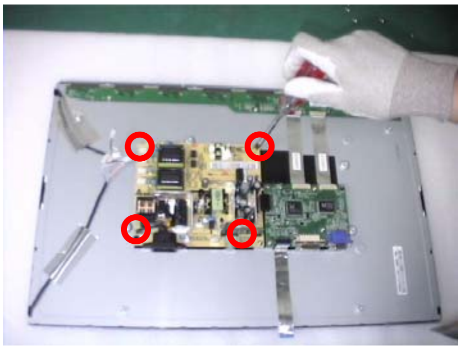


Step 5 :

Insert new Lips Board.



Step 6 :
Fasten 4 fixed screws.



Step 7 : Completed.

5. Remove OSD Board

Step 1 :
Separate both Audio Cable.



Step 2 :
Take OSD Board apart.



Step 3:
Completed.



6.Change New OSD Board



Step 1 :

Place New OSD Board.



Step 2 :

Insert Audio cable to connectors of New OSD Board.

Step 3:

Completed.

7. Add Cover to AD PCB Heatsink



Step 1 :

Join the PCB Cover.



Step 2 :

Fasten 4 fixed screws.

Step 3 :
Fasten 2 fixed screws



Step 4 :
Fasten 4 fixed screws.



Step 5 :
Insert 4 pieces of Backlight wires.



Step 6 :
Join LCD module and remove bezel.



Step 7 :
Insert FFC.



Step 8 : Completed.

8. Rear Assy & Stand Assembly

Step 1 :
Place Rear Cover.



Step 2 :
Fasten 3 fixed screws.



Step 3 :
Place the Stand Assy.



Step 4 :
Fasten 6 fixed screws.

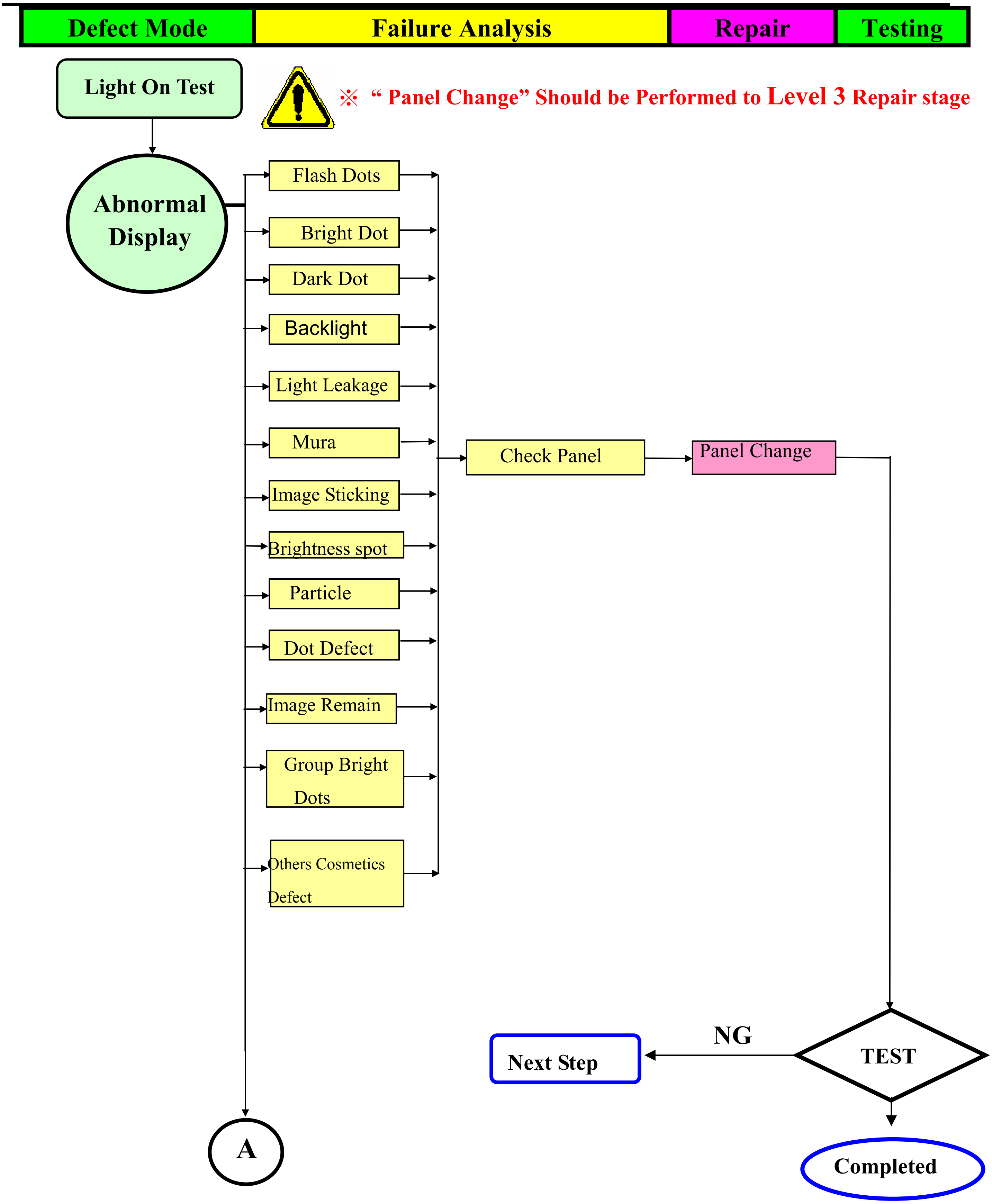


Step 5 :
Join the Stand Covers.



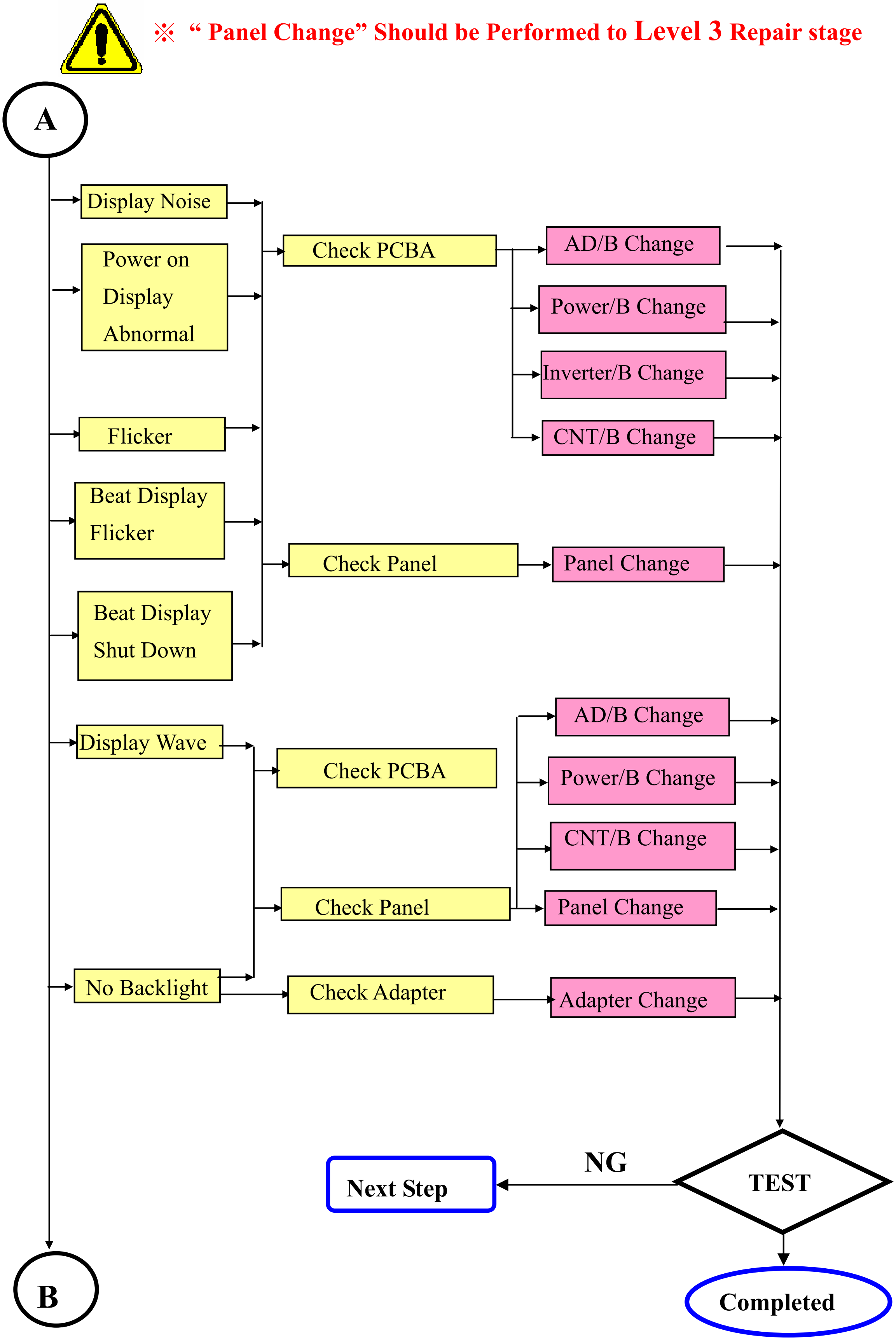
Step 6 : Completed.

6. Troubleshooting Flow Chart

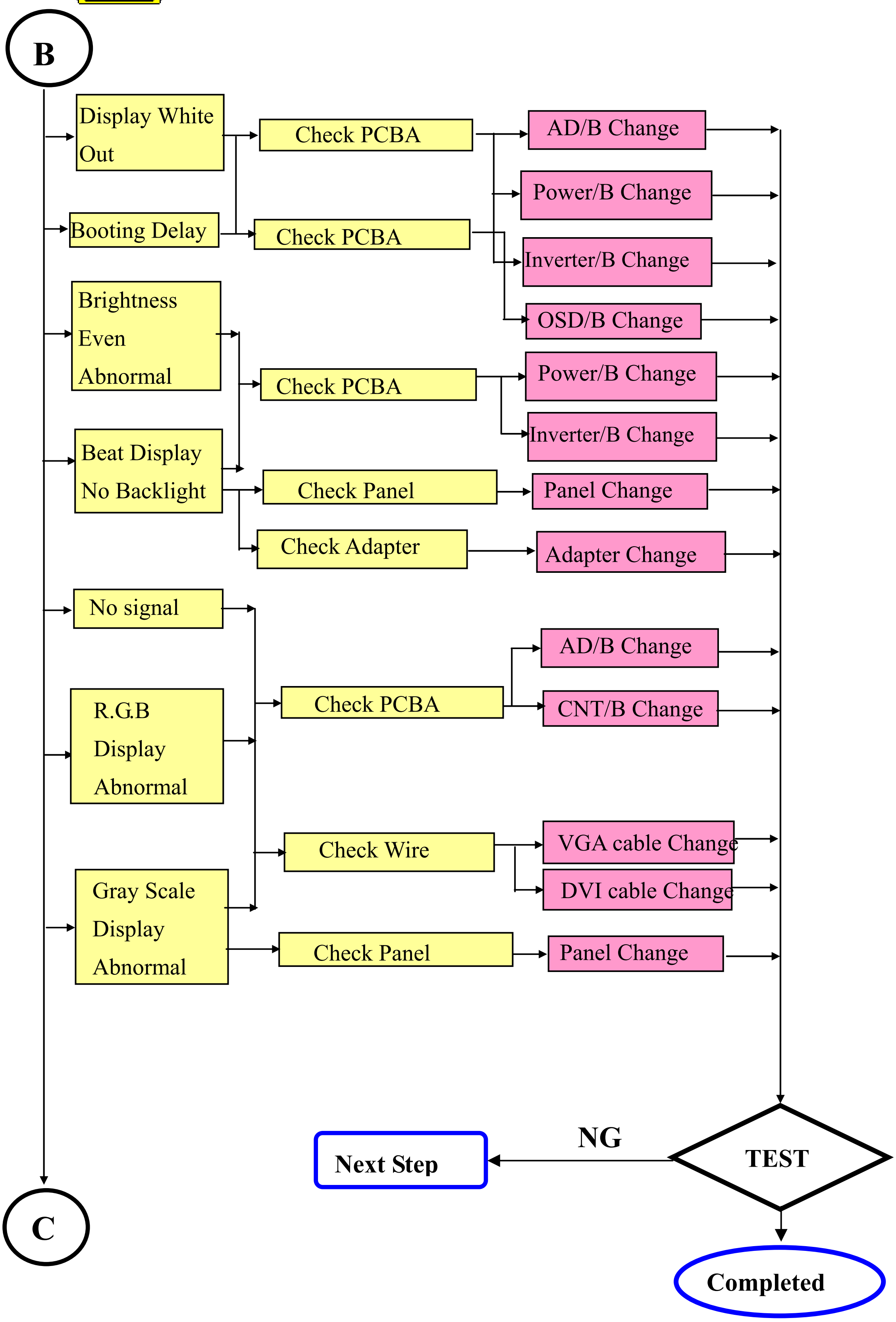


Defect Mode	Failure Analysis	Repair	Testing

※ " Panel Change" Should be Performed to Level 3 Repair stage

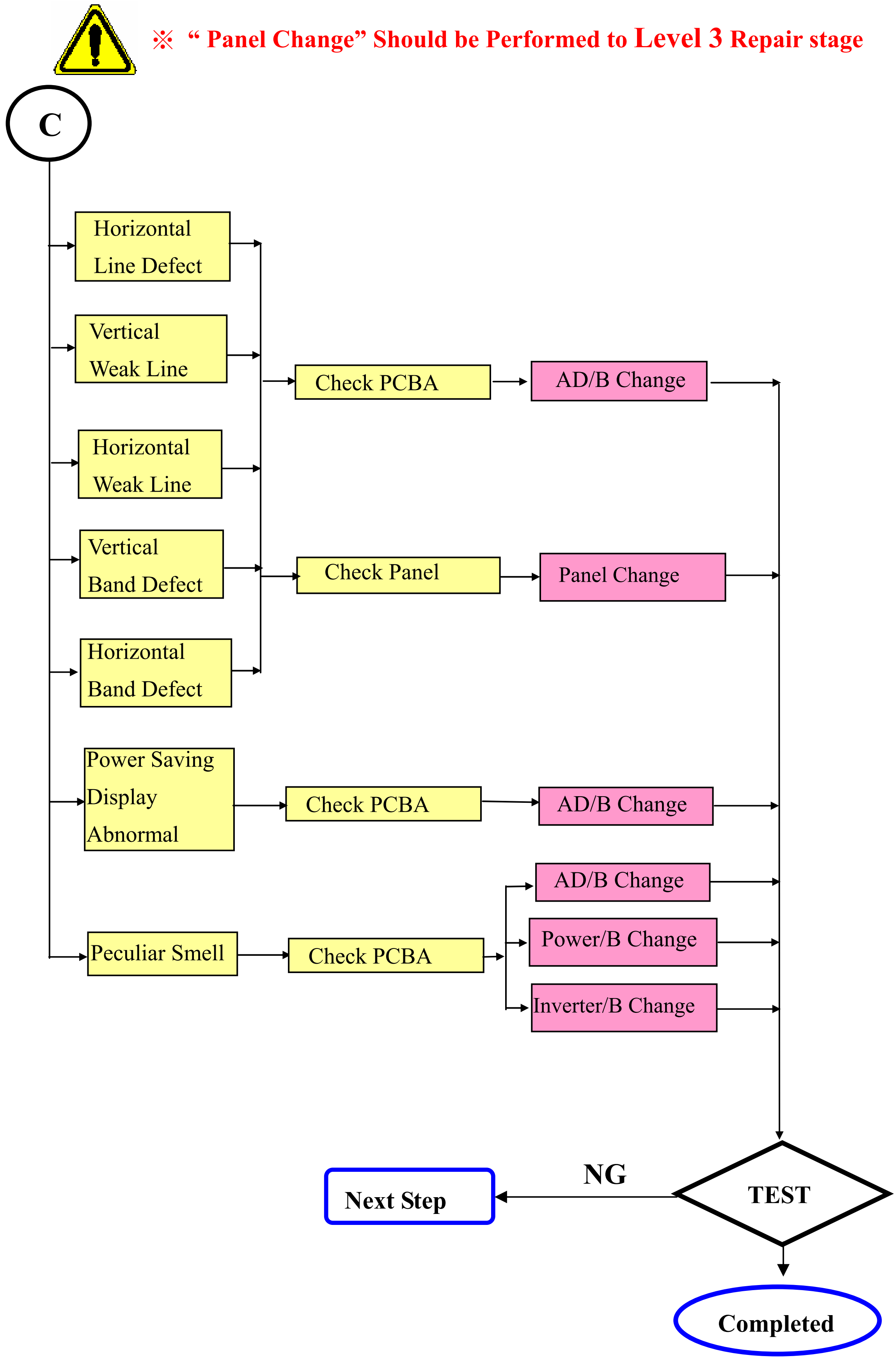


※ " Panel Change" Should be Performed to Level 3 Repair stage



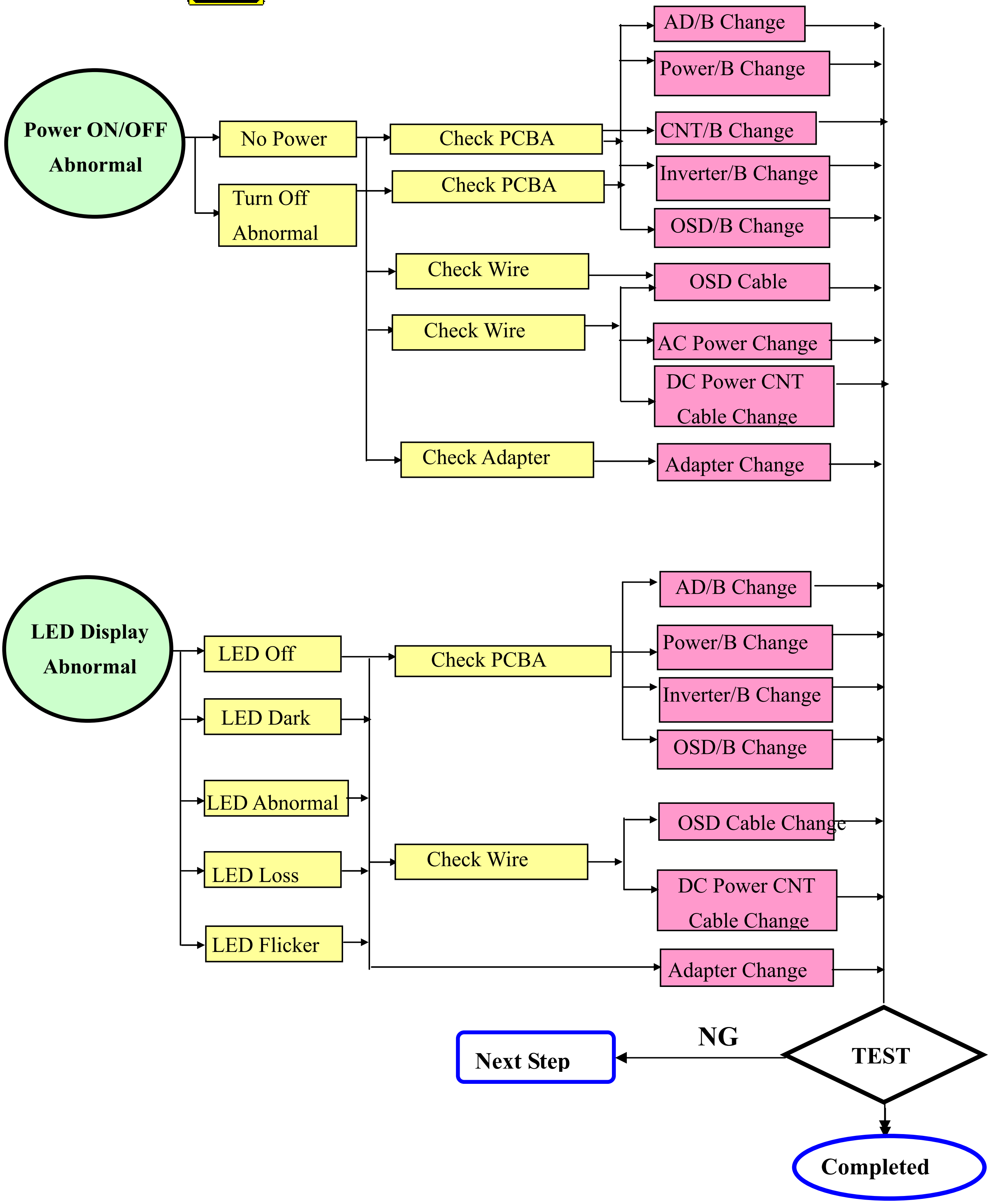
Defect Mode	Failure Analysis	Repair	Testing

※ "Panel Change" Should be Performed to Level 3 Repair stage



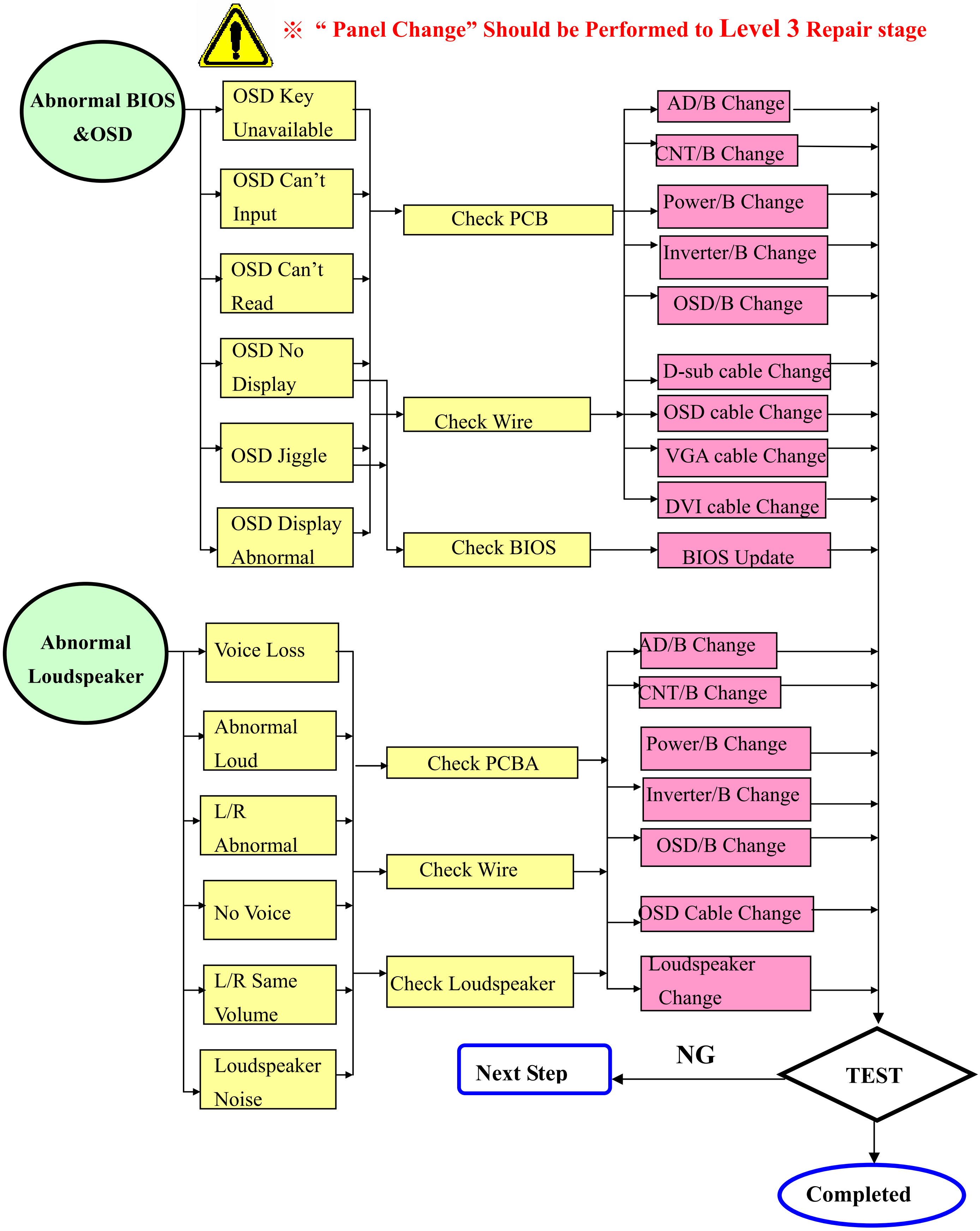
Defect Mode	Failure Analysis	Repair	Testing

※ " Panel Change" Should be Performed to **Level 3** Repair stage



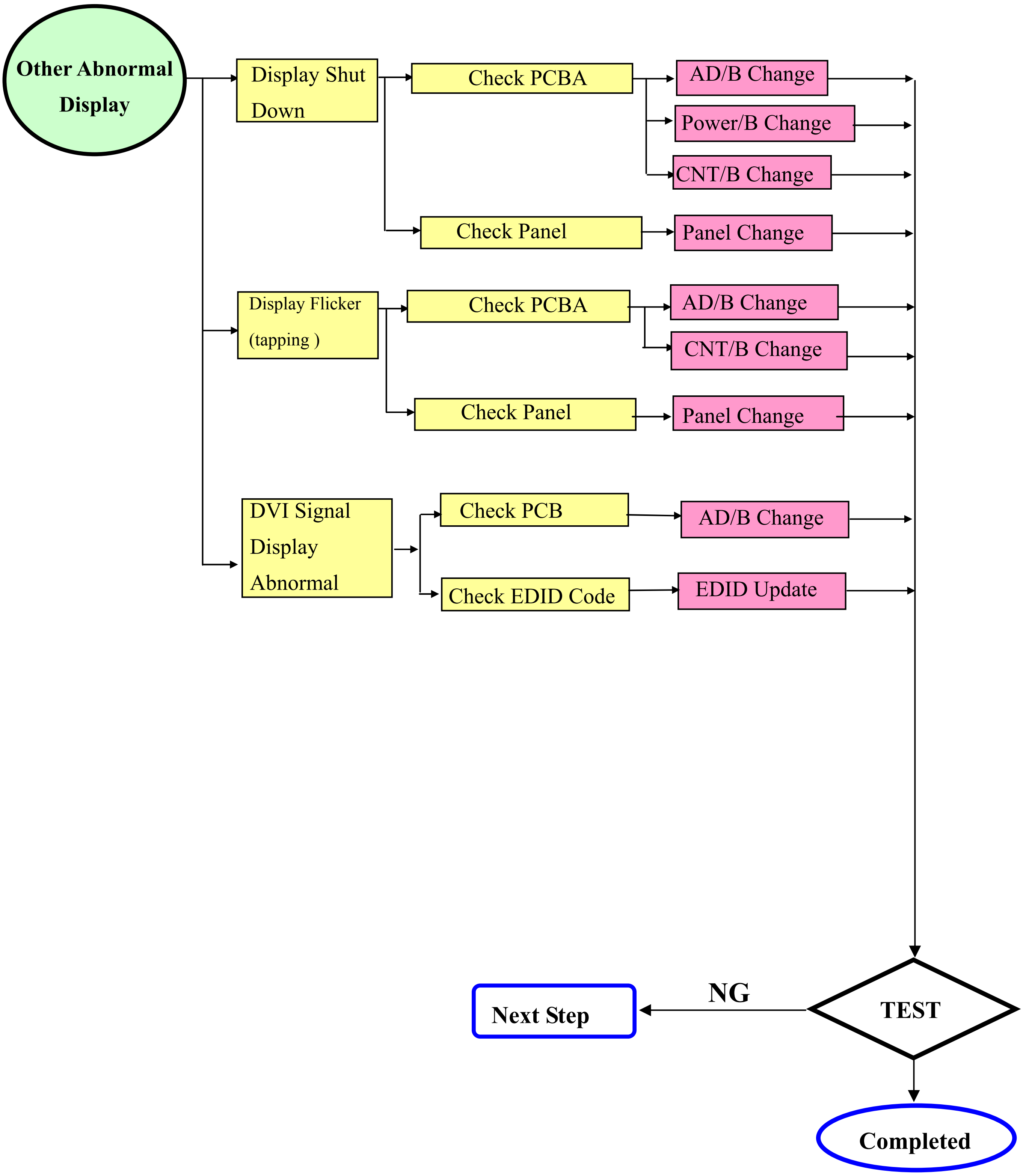
Defect Mode	Failure Analysis	Repair	Testing

※ " Panel Change" Should be Performed to Level 3 Repair stage



Defect Mode	Failure Analysis	Repair	Testing

※ " Panel Change" Should be Performed to Level 3 Repair stage



Trouble Shooting Analysis

Check the information in this section to see if the problems can be solved before requesting repair.

Note：The consumers are only allowed to solve the problems described as below. Any unauthorized product modification, or failure to follow instructions supplied with the product will end the warranty immediately.

- **No image**
  - Make sure power button is ON.
  - Check whether the LCD monitor and computer power cords are plugged and whether there is a supply of power.
- **No Signal Input**
  - Check the signal connection between the computer and LCD monitor.
- **"Out of Range"**
  - Check the computer image output resolution and frequency and compare the value with the preset values (Please refer to [Appendix-Display Mode]).
- **Fuzzy Image**
  - Adjust Phase.
- **Image too bright**
  - Adjust brightness and contrast by OSD.
- **Image too dark**
  - Adjust brightness and contrast by OSD.
- **Irregular image**
  - Check the signal connection between the computer and LCD monitor.
  - Perform Auto Adjust.
- **Distorted image**
  - Reset the LCD monitor
  - Take off extra accessories (such as signal extension cord).
- **Image is not centered**
  - Use OSD Image Menu to adjust H_Position and V_Position.
  - Check image size setting.
  - Perform Auto Adjust.
- **Size is not appropriate**
  - Use OSD Image Menu to adjust H_Position and V_Position.
  - Check image size setting.
  - Perform Auto Adjust.
- **Uneven color**
  - Use OSD Color Menu to adjust color setting.
- **Color too dark**
  - Use OSD Color Menu to adjust color setting.
- **Dark area distorted**
  - Use OSD Color Menu to adjust color setting.
- **White color is not white**
  - Use OSD Color Menu to adjust color setting.

7. Recommended Spare Parts List

RECOMMENDED SPARE PARTS LIST (VX2245wm-1)

ViewSonic Model Number:VS11349

Rev: 1a

Serial No. Prefix: QD0

Item	Description		ECR/ECN	ViewSonic P/N	Ref. P/N	Universal number#
1	**Accessories:**	Power Cord,LP-53 & VCTF 0.75mm^2 3C		A-00005071	32-D002330	
2	**PC Board Assembly:**	Power Supply Board (Lips W/ Audio Vo.7)		B-00008026	27-D009542	
3		Main Board Rev.04		B-00008027	35-D010627	
4		PCBA Rev.02,ODM		B-00008028	35-D010238	
5	**Cabinets:**	Front Panel (Bezel)		C-00008041	40-D010959	
6		Back Cover		C-00008042	40-D010948	
7		Cover Hinge - Right		C-00008142	40-D012465	
8		Cover Hinge - Left		C-00008143	40-D012466	
9		Base Assembly - (Stand Seat Assy)		C-00008144	40-D013541	
10	**Cables:**	DVI Cable, S/L, 1.8M, W/2F		CB-00002083	32F0000004	
11		Audio Cable (Accessory Black, 28AWG)		CB-00005678	32F2818011	
12		Accessory Cable,D-Sub, (30AWG)		CB-00005851	32-D002132	
13		Flat Cable (FFC 36 Pins)		CB-00008014	32-D008479	
14		Flat Cable (FFC 15 Pins)		CB-00008015	32-D011077	
15	**Documentation:**	Safety Label - 149 mmx29 mm		DC-00008137	77-D013049	
16		Carton Label - 76.2 mmx76.2 mm		DC-00008138	77-D013048	
17		CD-Rom		DC-00008139	76-D013047	
19	**Hardware:**	Screw, 3,P=0.5 mm,L=4 mm,Pan Head		HW-00000553	42A9930008	
20		Screw, 3,P=0.5 mm,L=4 mm,Pan Head		HW-00000553	42A9930008	
21		Screw,M3*P0.5*6,Steel		HW-00000555	42A9930014	
22		Screw, M4, P=0.7 mm, L=8 mm Round Head		HW-00004042	42-D000649	
23		Screw, 4,P=0 mm,L=11.8 mm,Hexagon Stand Off,Socket		HW-00006041	42A9940007	
24		Screw, M3,P=0.5 mm,L=2.5 mm		HW-00008002	42-D009237	
25		Screw, M3,P=1.27 mm,L=10 mm		HW-00008003	42A9930015	
26	**Miscellaneous:**	Tape Security, OPP,L900xW50x0.045mm		M-00000560	7345511002	
27		Decoration Plate		M-00008031	40-D013544	
28	**Packing Material:**	PE Bag,600 mmx650 mmx0.13 mm		P-00008033	78-D009624	
29		Foam - (Left)		P-00008139	78-D013535	
30		Foam - (Right)		P-00008140	78-D013545	
31		Craft Box		P-00008141	78-D013534	
32	**Plastics:**	Panel Cover (Panel Protector Film)		PL-00008008	73-D009538	

Remark 1: Above listed items are examples, supplier can expand the rows to add more necessary items.

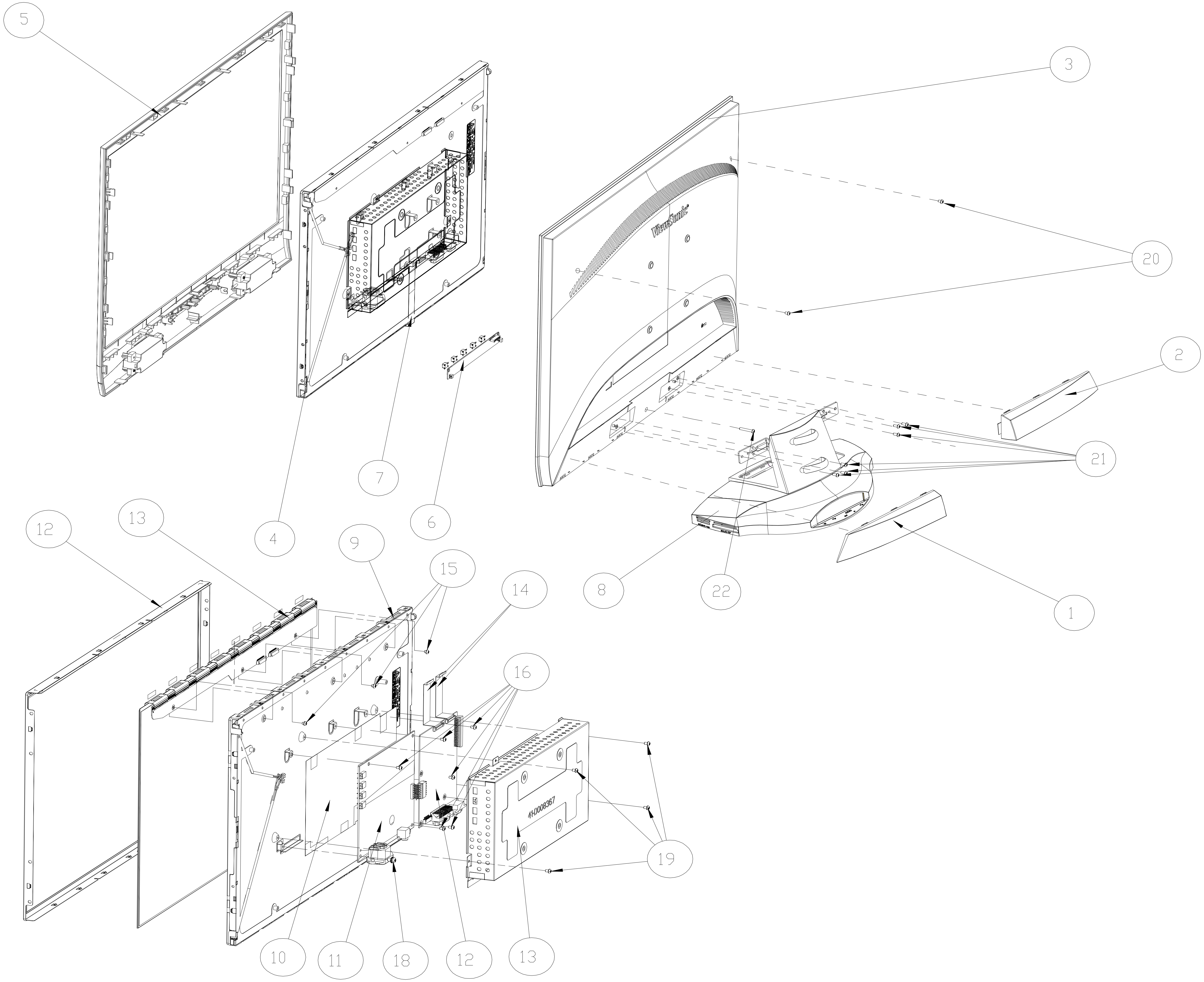
Remark 2: All revised RSPLs with newly added items or any change made should be highlighted and correlated with the ECN/ECR approved by ViewSonic Corporation. This is to eliminate repeated cross checks of each item between this version and prior versions.

BOM LIST (VX2245wm-1)

ViewSonic Model Number: VS11349
Rev: 1a
Serial No. Prefix: QD0

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1	N/A	73-C000047	ACF, COG, AC-8405Z-23 1.5mmX100M, 100000 mmx1.5 mm, Hitachi Chemical, COG-ACF, Green I			0.0028
2	N/A	36-D006411	Driver IC, COG, Scan, M170E5-L09, HX8653-A000PD400, 240/263/256Channel, Himax, (HX8633 shrank version), Green II			4
3	N/A	L4M003XXXX	22"wide_TN, Photo Spacer , Corning 0.7mm Glass , Resin/BM(Panel Base)			1
4	N/A	L4M003XXBI	22"wide_TN, Photo Spacer , Corning 0.7mm Glass , Resin/BM(Sheet Base)			0.0833
5	N/A	74-D007599	Polarizer, TFT, Degree 135, 478.16 mmx300.2 mmx0.215 mm, XT300CMM220Z1H0B, M220Z1, LG Chem, LG HCR EWV			1
6	N/A	74-D007598	Polarizer, TFT, Degree 135, 478.16 mmx300.2 mmx0.215 mm, XT300CMM220Z1H0B, M220Z1, LG Chem, LG HCR EWV			1
7	N/A	36-D007038	Driver IC, COF, Data, M220Z1-L01, HX8019-A07BCBC5, COF, 6 bit, 642Channel, Himax, Green II			8
8	N/A	73-D008216	ACF, COF, AC-4255U-16, 200000 mmx1.2 mm, Hitachi Chemical, Green I			0.0025
9	N/A	73-D002676	ACF, PCB, AC-9825R-35, 100000 mmx1.5 mm, Hitachi Chemical, PCB-ACF, Green			0.005
10	N/A	35-D010045	PCBA for , A220Z1-Z01-H, A220Z1-Z01-H-X, 1101-03, Rev.04, USI/ITC, ODM, Green II			1
11	N/A	7349951002	Silicone, TORAY/-9187L, 330g			0.5
12	HW-00000553	42A9930008	SCREW, 3, P=0.5 mm, L=4 mm, Pan Head, Phillips Cross Recess, Hama Naka Motogawa Hama Naka Shoukin Shiho Shin Yee Shye Ching, Green			13
13	HW-00006041	42A9940007	SCREW, 4, P=0 mm, L=11.8 mm, Hexagon Stand Off, Socket, Shiho Shin Yee Shye Ching Hama Naka Motogawa, Green I			4
14	HW-00004042	42-D000649	SCREW, M4, P=0.7 mm, L=8 mm, Round Head, Phillips Cross Recess, plate color Zn, Screw_with_Washer, Shye Ching Hama Naka Motogawa Shin Yee, head D8, Green			1
15	N/A	41-D007402	Metal Frame Front, M220Z1-L01, SECC 0.6t, Fomgder/CLT_Metal, Green II			1
16	N/A	44-D008027	Backlight Unit, A220Z1, Forhouse/ROE, Green II			1
17	N/A	41-D008024	Cover AD Assy, A190A2, SECC, Jiin Ming, Left_Side 4 connector_VESA100*100, Green II			1
18	CB-00008014	32-D008479	FFC, CFC2128/862P060068D, 36 Pins, Tennsure/Hung Fu, AL foil, Green			2
19	HW-00008002	42-D009237	SCREW, M3, P=0.5 mm, L=2.5 mm, Pan Head, Phillips Cross Recess, Shye Ching, Green I			3
20	B-00008026	27-D009542	Lips With Audio, DAC-19M009 AF, 01 A, 5 V/3 A, 13.8 V0.7 A, I TYPE, 7 mA, 1710 V, Delta Dongguan_LIPS, Green II			1
21	B-00008027	35-D010627	PCBA for , A220Z1-Z01-H, A170E2-E03-H-S6, 1101-02, Rev.04, ITC USI, ODM, RTD2120S-LF, Green II			1
22	N/A	10-D012854	Software (EDID_DVI), A220Z1, VSCBB1ED00, VSC, Checksum(EO), VX2245wm, Digital Port, Green II			1
23	N/A	10-D012855	Software (EDID_D-SUB), A220Z1, VSCBBIEA00, VSC, Checksum(8B), VX2245wm, Analog Port, Green II			1
24	HW-00000553	42A9930008	SCREW, 3, P=0.5 mm, L=4 mm, Pan Head, Phillips Cross Recess, Hama Naka Motogawa Hama Naka Shoukin Shiho Shin Yee Shye Ching, Green			2
25	HW-00000555	42A9930014	SCREW, 3, P=0.5 mm, L=6 mm, Pan Head, Phillips Cross Recess, Hama Naka Shoukin/Shye Ching/Hama Naka Motogawa/Shin Yee, NA, Green I			6
26	HW-00008003	42A9930015	SCREW, M3, P=1.27 mm, L=10 mm, Pan Head, Phillips Cross Recess, Green			1
27	B-00008028	35-D010238	PCBA for , A220Z1-Z01-H, A220Z1-Z01-H-K2, 1101-02, Rev.02, ITC USI, ODM, Green II			1
28	C-00008041	40-D010959	Bezel Assy, A220Z1-H05, Black(J01-J91A11B5), Fuking, SPK, Green I			1
29	C-00008042	40-D010948	Rear Assy, A220Z1-H05, Silver(TY4818A)/Black(M1077), Fuking, audio_in+DVI-D, Green II			1
30	CB-00008015	32-D011077	FFC, FFC1DDX-A186S1A, 15 Pins, Tennsure_FFC, A220Z1-H05, Green I			1
31	C-00008142	40-D012465	Cover Hinge, A220Z1-H08, ABS, PA-757, ORIGINAL, Fuking, RIGHT, Green II			1
32	C-00008143	40-D012466	Cover Hinge, A220Z1-H08, ABS, PA-757, ORIGINAL, Fuking, LEFT, Green II			1
33	C-00008144	40-D013541	Stand Seat Assy, A220Z1-H08, ABS, Black(J01)/Siliver(877C), ViewSonic Display Limited, VSC P/N C-00006107, Green I			1
34	PL-00008008	73-D009538	Panel Protector Film, A220Z1-H03, XG-536 T=0.1mm, Just Enter, BLANK			1
35	N/A	77-D013043	SN Label for , A220Z1-H08, 50 mmx25 mm, Kunshan Hwakuan Chang Huang, VSC_VX2245wm, Green II			1
36	DC-00008137	77-D013049	Safety Label for , A220Z1-H08, 149 mmx29 mm, Kunshan Hwakuan Chang Huang, VSC_VX2245wm, Green II			1
37	N/A	7841795141	Corner Protector, paper, 50 mmx50 mmx900 mm, Green I			0.167
38	DC-00000586	7741999141	Module Label, A190E2-H03, 75 mm, 40 mm, Non Green			0.042
39	M-00000560	7345511002	Tape, A170E1-H0P, 900 mmx50 mmx0 mm, Symbio, OPI			0.005
40	N/A	78-D004864	Corner Protector, Paper, M190A1, 50 mmx50 mmx1780 mm, Jonin/NingBo Ming-Chan_EPST:3mm, Green II			0.167
41	P-00008033	78-D009624	Bag, 600 mmx650 mmx0.13 mm, PE Foam, 650, Huang Jyii, Green I			1
42	DC-00008139	76-D013047	MENU for A220Z1-H08, Complex, 4C, Car Tong Kunshan Yi Ching, VSC_VX2245wm CD-ROM, Green II			1
43	DC-00008138	77-D013048	Carton Label for , A220Z1-H08, 76.2 mmx76.2 mm, Chang Huang Kunshan Hwakuan, VSC_VX2245wm, Green II			1
44	P-00008140	78-D013545	Cushion, A220Z1-H08, EPS, WHITE, 260 mmx195 mmx590 mm, Li Ta NingBo Ming-Chan_EPS, EPS foam(Right), Green II			1
45	M-00008031	40-D013544	Decoration Assy, A220Z1-H08, ABS, Siliver(877C), ViewSonic Display Limited, VSC P/N C-00006107, Green I			1
46	N/A	32-D013543	Function Cable, E87647 30V, 1Pins-1Pins, ViewSonic Display Limited, VSC P/N C-00006107, Green I			1
47	P-00008139	78-D013535	Cushion, A220Z1-H08, EPS, WHITE, 260 mmx195 mmx590 mm, Li Ta NingBo Ming-Chan_EPS, EPS foam(left), Green II			1
48	N/A	76-D013532	MENU for A220Z1-H08, CD-ROM, 4C, ViewSonic Display Limited, VSC P/N:C-0006107, Green II			1
49	N/A	32-D013533	Function Cable, 1Pins-2Pins, ViewSonic Display Limited, VSC P/N C-00006107, Green			1
50	P-00008141	78-D013534	Carton, A220Z1-H08, 575 mmx255 mmx600 mm, Chen Yi Paper Shanghai Zhung Hao, VSC_VX2245wm, Green II			1
51	N/A	27-D013549	Adapter, 20AWGX2C 105 300V, 2 V, 0.8 A, 40 W, L=1800+/-50mm, BLACK, UL/BSMI, ViewSonic Display Limited, VSC P/N C-00006107, Green			1
52	N/A	78-D013559	Pallet, A220Z1-H08, Wooden, 1180 mmx1080 mmx143 mm, Ming Li Hua Sun Paper Shanghai Hang Wei, Green II			0.042
53	N/A	79-D013558	Shipping Package Information for , A220Z1-H08, VSC			1
54	N/A	10-D013523	Software (BIOS), A220Z1, 22Z1LR7000, VSC, Checksum(Bank1:0xFE, Bank2:0xC4), RSDS, RTD2120, Dual+Audio/Analog+Audio, Green II			1
55	CB-00002083	32F0000004	Accessory Cable, DVI, Black, Jceprocable, DVI-D(M) TO DVI-D(M), S/L, W/2F, Green I			1
56	CB-00005678	32F2818011	Accessory Cable, Audio, Black, Jhen Vei, A170E1-H01, 28AWG, Green			1
57	CB-00005851	32-D002132	Accessory Cable, D-Sub, JV-4777, Black, Pins-Pins, Jhen Vei, 30AWG, Reduce Shield Rate, Green I			1
58	A-00005071	32-D002330	Power Cord, LP-53 & VCTF 0.75mm^2 3C 6 BLACK & LS-13J, BLACK, BSMI, 1800 mm, Linetek, Green I			1

8. Exploded Diagram and Exploded Parts List



EXPLODED PARTS LIST (VX2245wm-1)

ViewSonic Model Number: VS11349

Rev: 1a

Serial No. Prefix: QD0

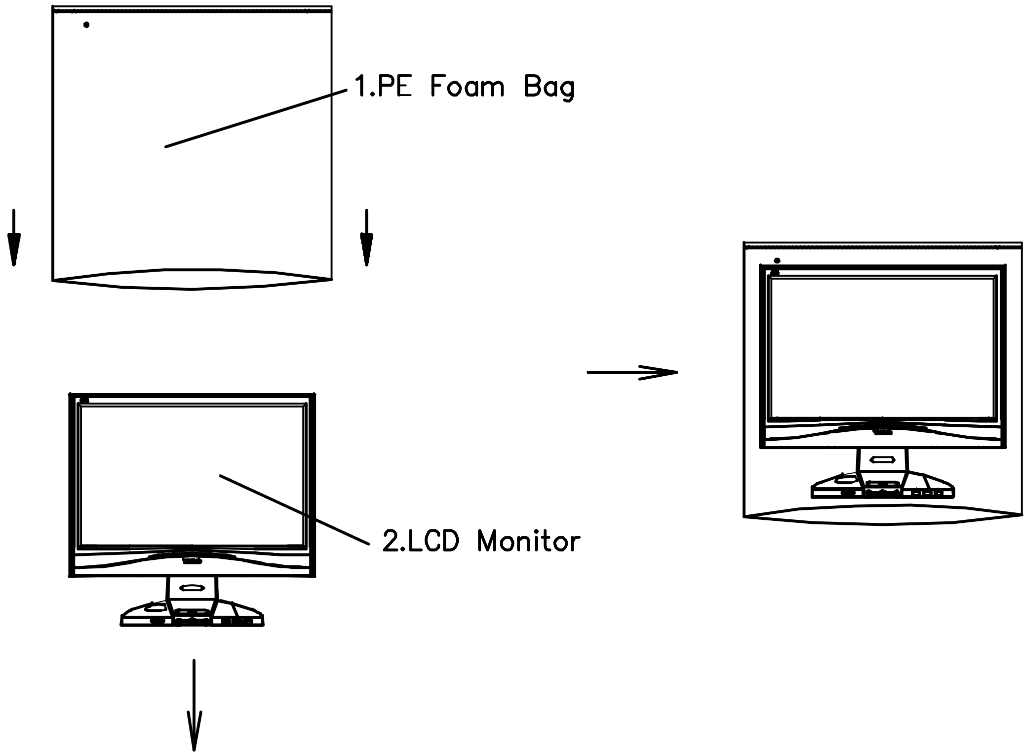
Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	C-00008143	40-D012466	Cover Hinge,A220Z1-H08,LEFT	1
2	C-00008142	40-D012465	Cover Hinge,A220Z1-H08,RIGHT	1
3	N/A	40-D010955	Rear Assy,A220Z1-H05	1
4	N/A	PM0ZFH0R00	22"Wide,Function BOM,D-sub+DVI+Audio	1
5	N/A	40-D013832	Bezel Assy,A220Z1-H05	1
6	N/A	35-D0110238	PCBA_A220Z1-Z01-H-K2	1
7	CB-00008015	32-D011077	FFC_15pin	1
8	C-00008144	40-D013541	Stand Seat Assy,A220Z1-H08	1
9	N/A	44-D009236	Backlight Unit,A220Z1	1
10	MULTIPLE MATCH	N/A	Maylar	1
11	N/A	27-D008552	Lips Without Audio	1
12	N/A	35-D009418	PCBA for ,A220Z1-Z01-H,A170E2-E03-H-S6	1
13	N/A	41-D005024	Cover AD Assy	1
14	N/A	32-D009479	FFC,36pin	2
15	HW-00008002	42-D009237	SCREW,M3,P=0.5mm,L=2.5mm,Pan Head	3
16	HW-00000553	42A9930008	SCREW,M3,P=0.5mm,L=4mm,Pan Head	7
18	HW-00004042	42-D000649	SCREW,M4,P=0.7mm,L=8mm,Round Head	1
19	HW-00000553	42A9930008	SCREW,M3,P=0.5mm,L=4mm,Pan Head	4
20	N/A	42A993008	SCREW,M3,P=0.5mm,L=5mm,Pan Head	2
21	HW-00000555	42A9930014	SCREW,M3,P=0.5mm,L=8mm,Pan Head	6
22	HW-00008003	42A9930015	SCREW,M3,P=1.27mm,L=10mm,Pan Head	1

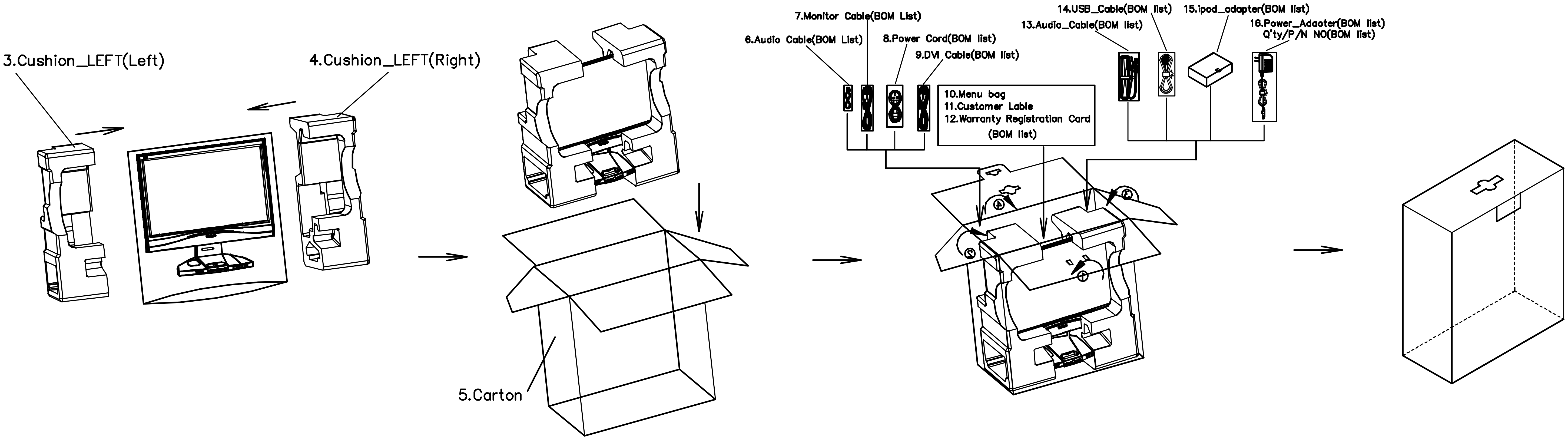
PACKING PART LIST (VX2245wm-1)

ViewSonic Model Number: VS11349

Rev: 1a

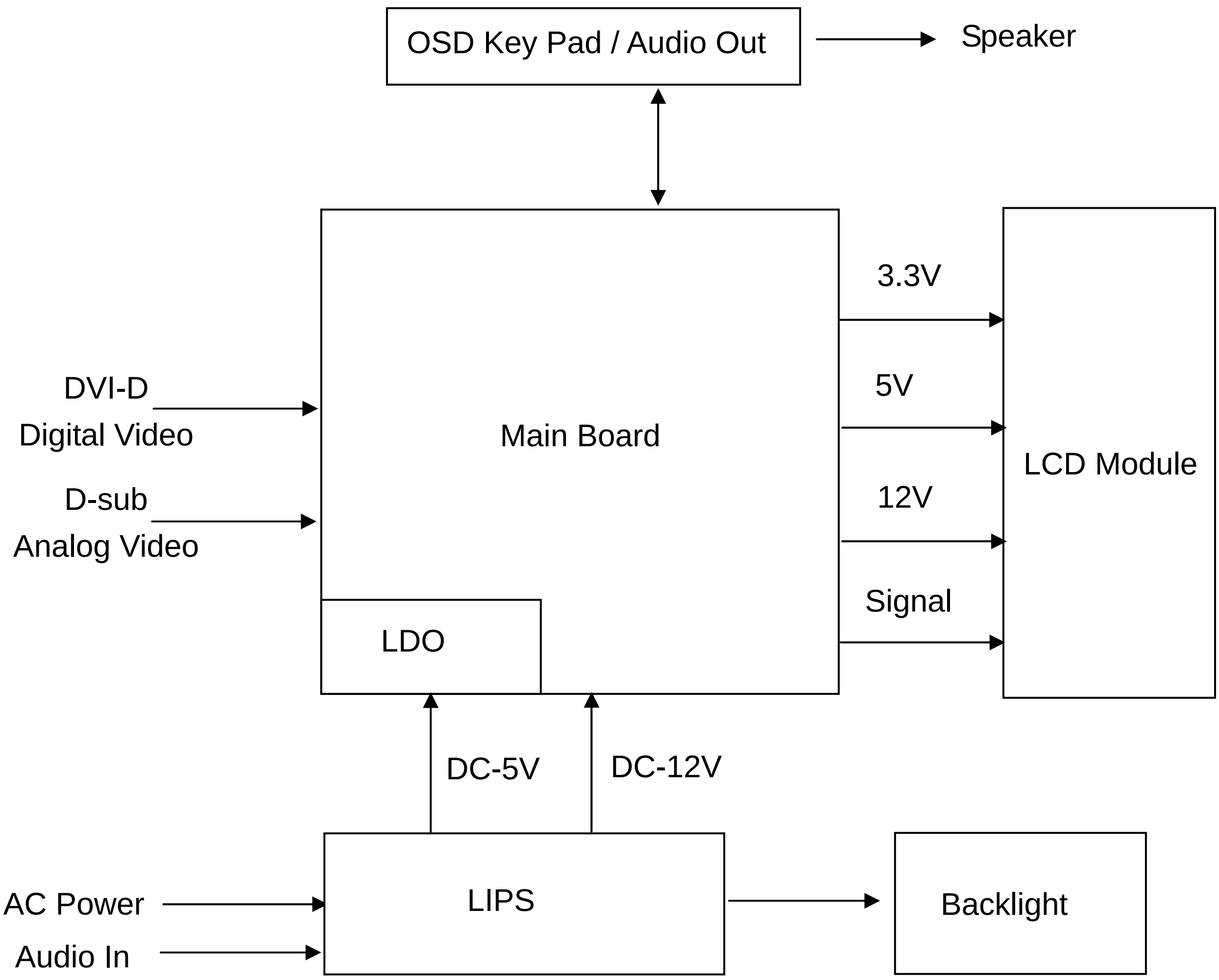
Item	ViewSonic P/N	Ref. P/N	Location	Q'ty
1	P-00008033	78-D009624	PE Foam Bag	1
2	N/A	MM0Z140K01	LCD Monitior	1
3	P-00008139	78-D013535	Cushion_LEFT(Left)	1
4	P-00008140	78-D013545	Cushion_LEFT(Right)	1
5	N/A	Different region (refer to BOM)	Carton	1
6	CB-00005678	32F2818011	Audio Cable	1
7	CB-00005851	32-D002132	Monitor Cable	1
8	A-00005071	32-D002330	Power Cord	1
9	CB-00002083	32F0000004	DVI-D Cable	1
10	N/A	Different region (refer to BOM)	Menu bag	1
11	N/A	Different region (refer to BOM)	Customer Label	1
12	N/A	Different region (refer to BOM)	Warranty Registration card	1
13	N/A	32-D013533	Audio Cable/Function Cable	1
14	N/A	32-D013543	USB Cable/Function Cable	1
15	M-00008031	40-D013544	ipod_adapter	1
16	N/A	27-D013549	Power_adapter	1



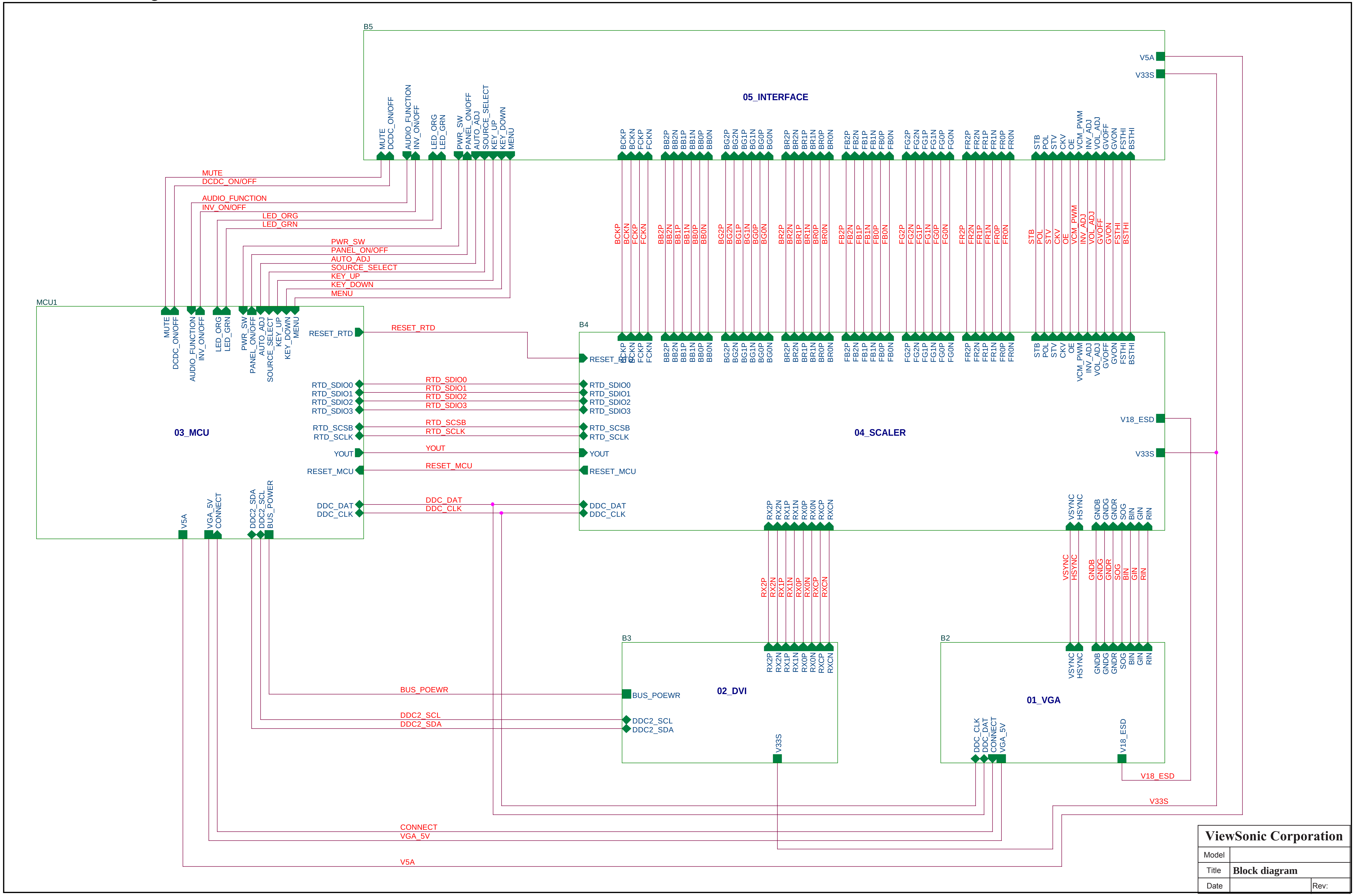


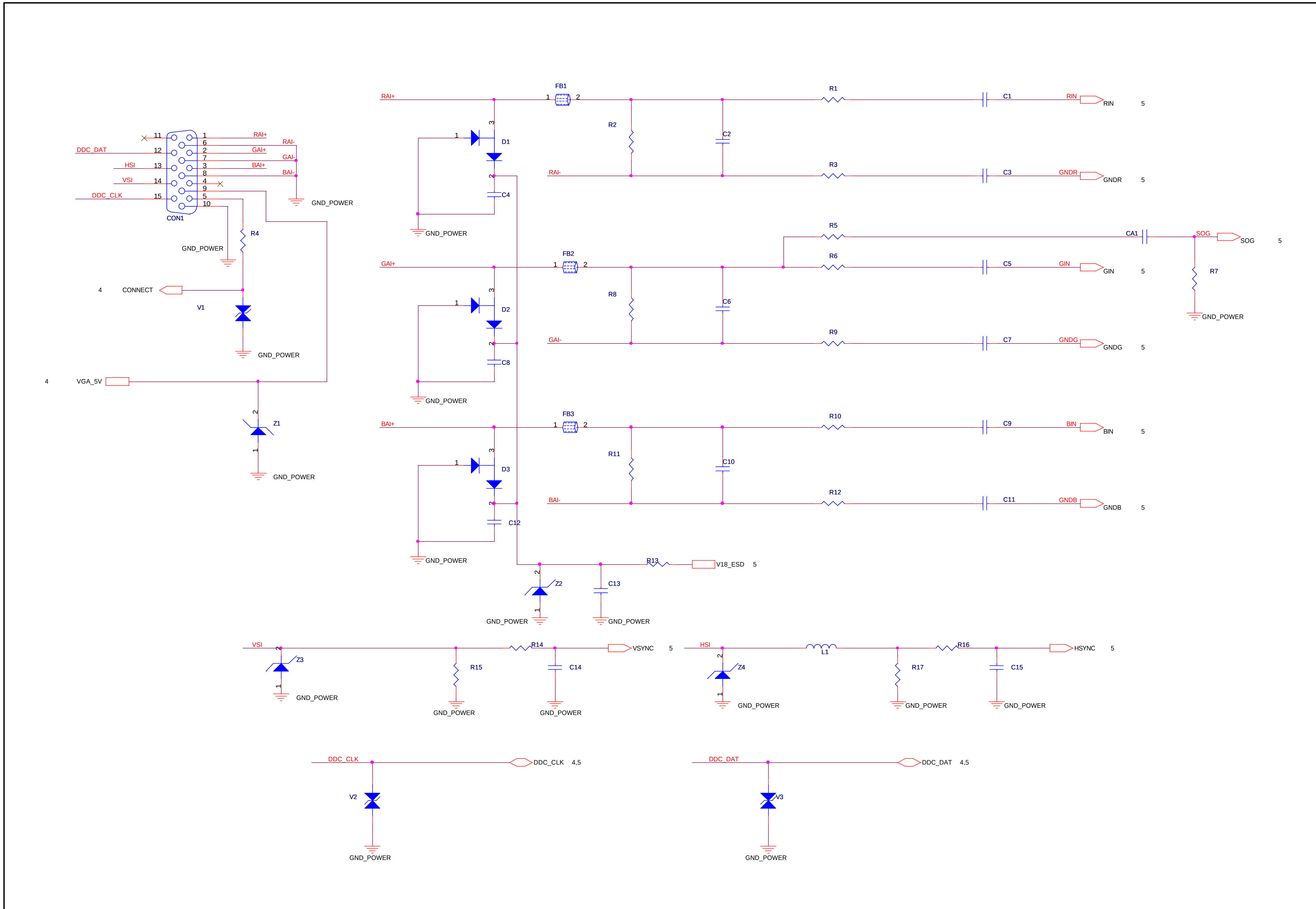
Carton dimensions:580(L)x260(W)x610(H)mm

9. Block Diagram

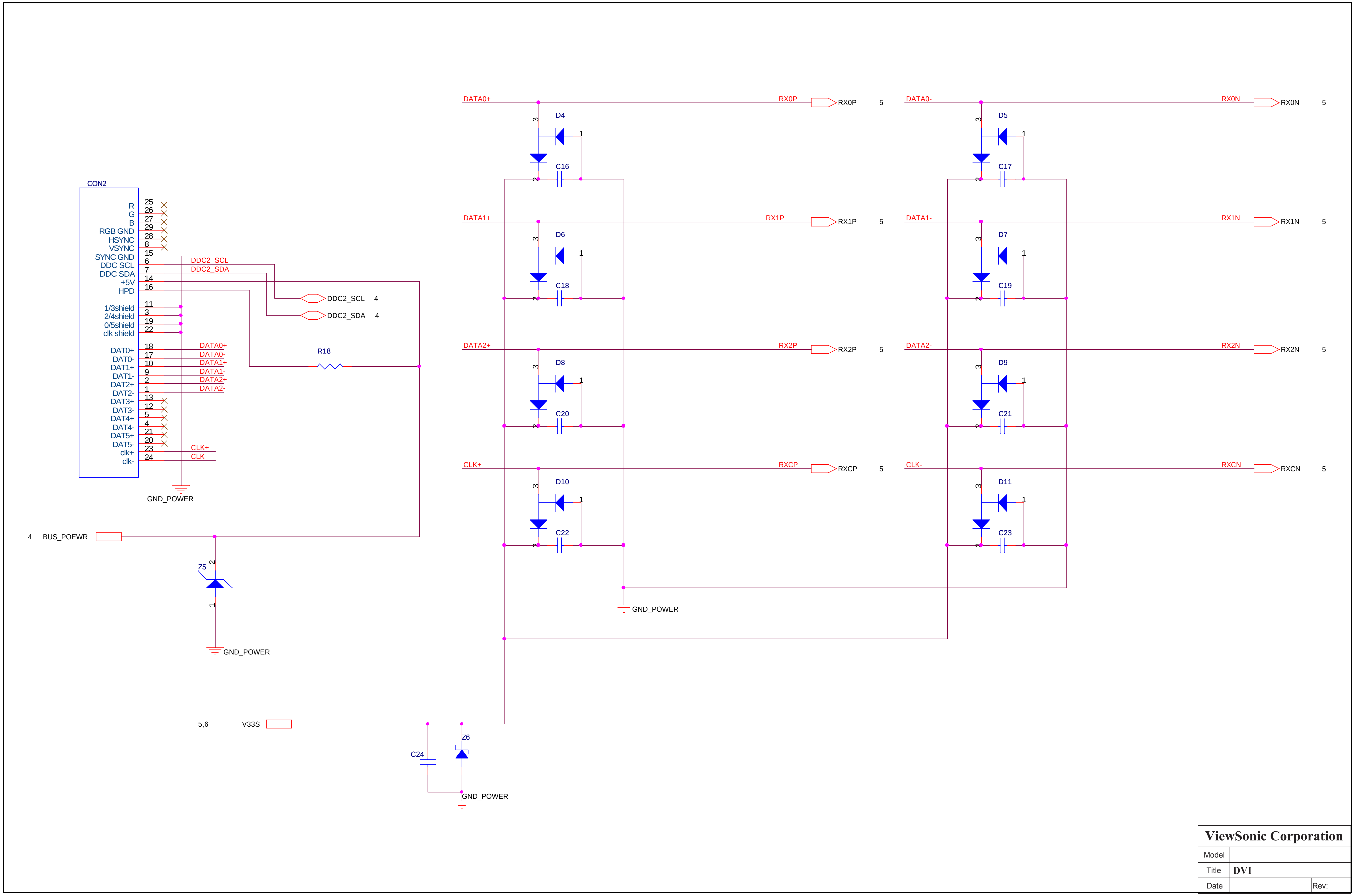


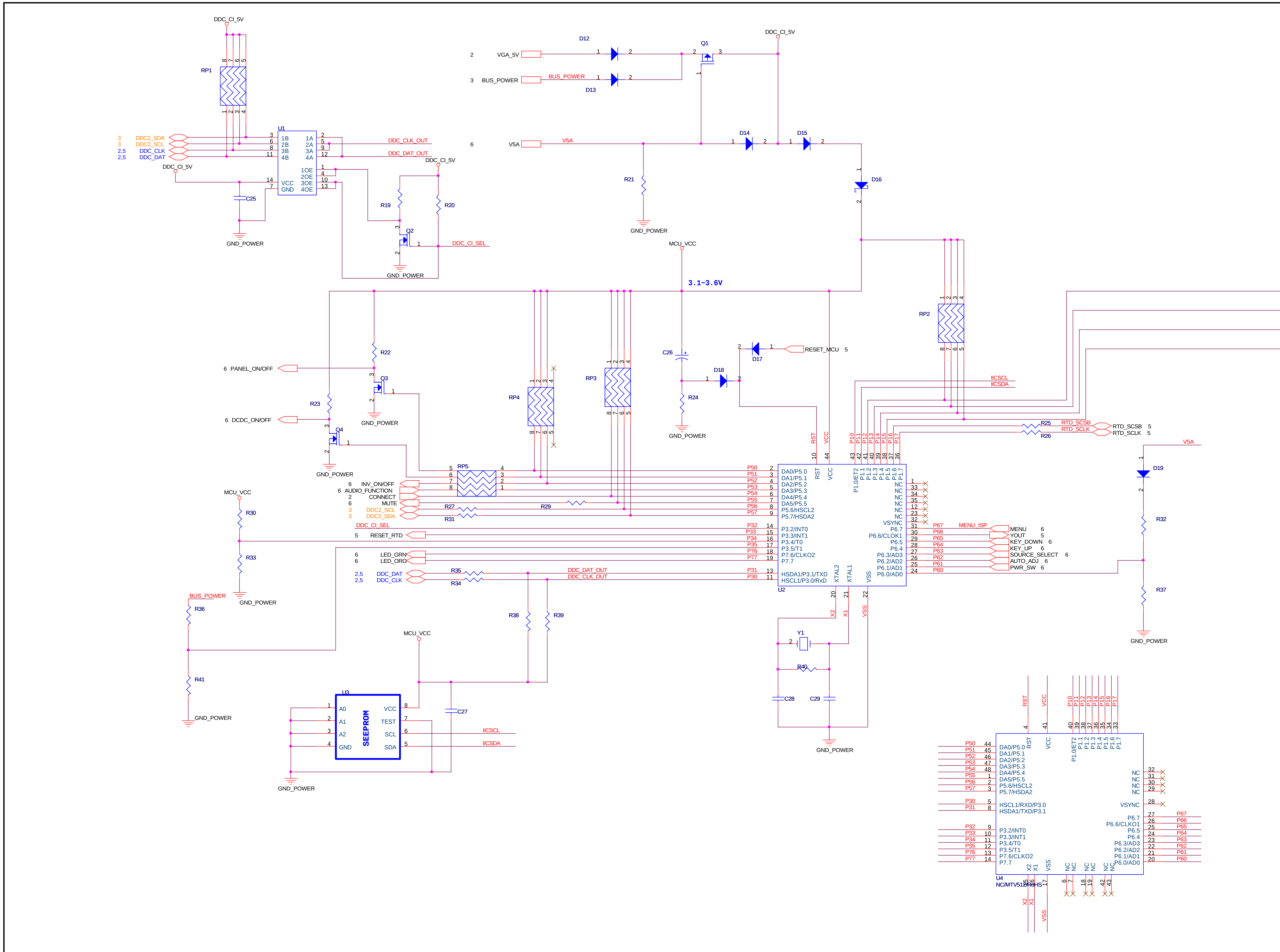
10. Schematic Diagrams



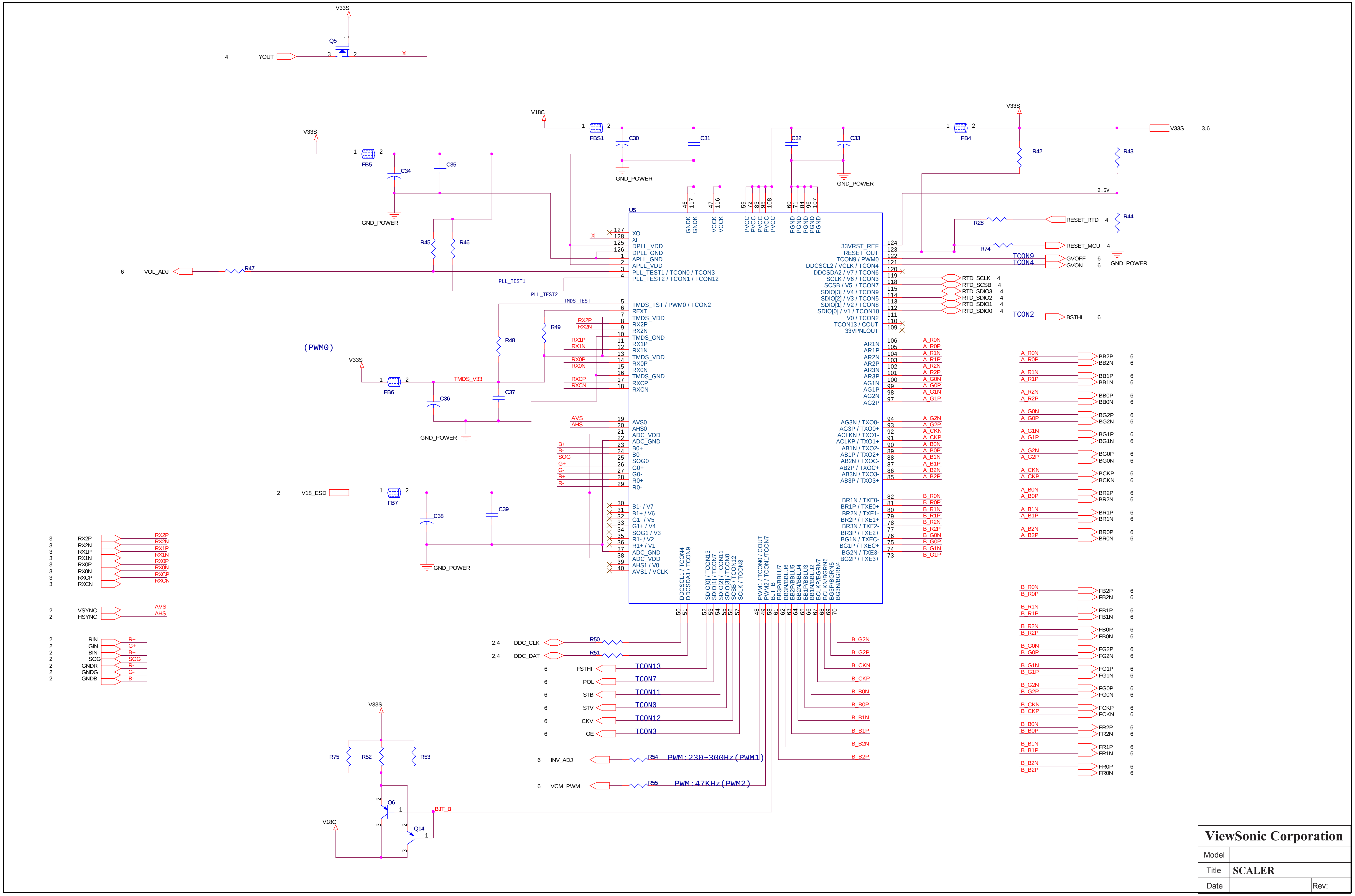


ViewSonic Corporation	
Model	
Title	VGA
Date	Rev:

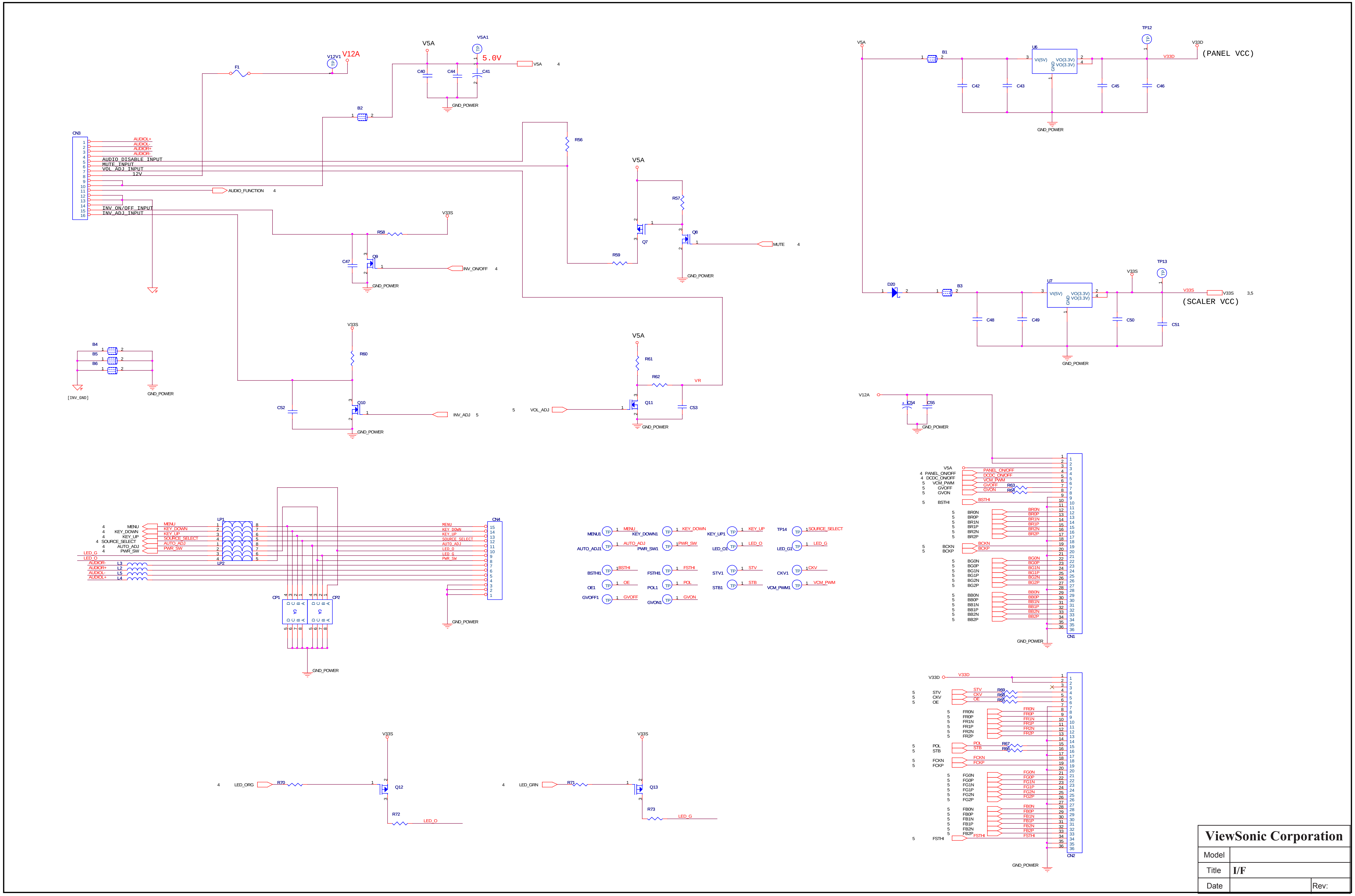

CON2
R
G
B
RGB GND
HSYNC
VSYNC
SYNC GND
DDC SCL
DDC SDA
+5V
HPD
1/3shield
2/4shield
0/5shield
clk shield
DAT0+
DAT0-
DAT1+
DAT1-
DAT2+
DAT2-
DAT3+
DAT3-
DAT4+
DAT4-
DAT5+
DAT5-
clk+
clk-
DDC2_SCL
DDC2_SDA
DATA0+
DATA0-
DATA1+
DATA1-
DATA2+
DATA2-
CLK+
CLK-
R18
GND_POWER
BUS_POEWR
Z5
V33S
C24
Z6
D4
D5
D6
D7
D8
D9
D10
D11
C16
C17
C18
C19
C20
C21
C22
C23
RX0P
RX0N
RX1P
RX1N
RX2P
RX2N
RXCP
RXCN
ViewSonic Corporation
Model
Title DVI
Date
Rev:



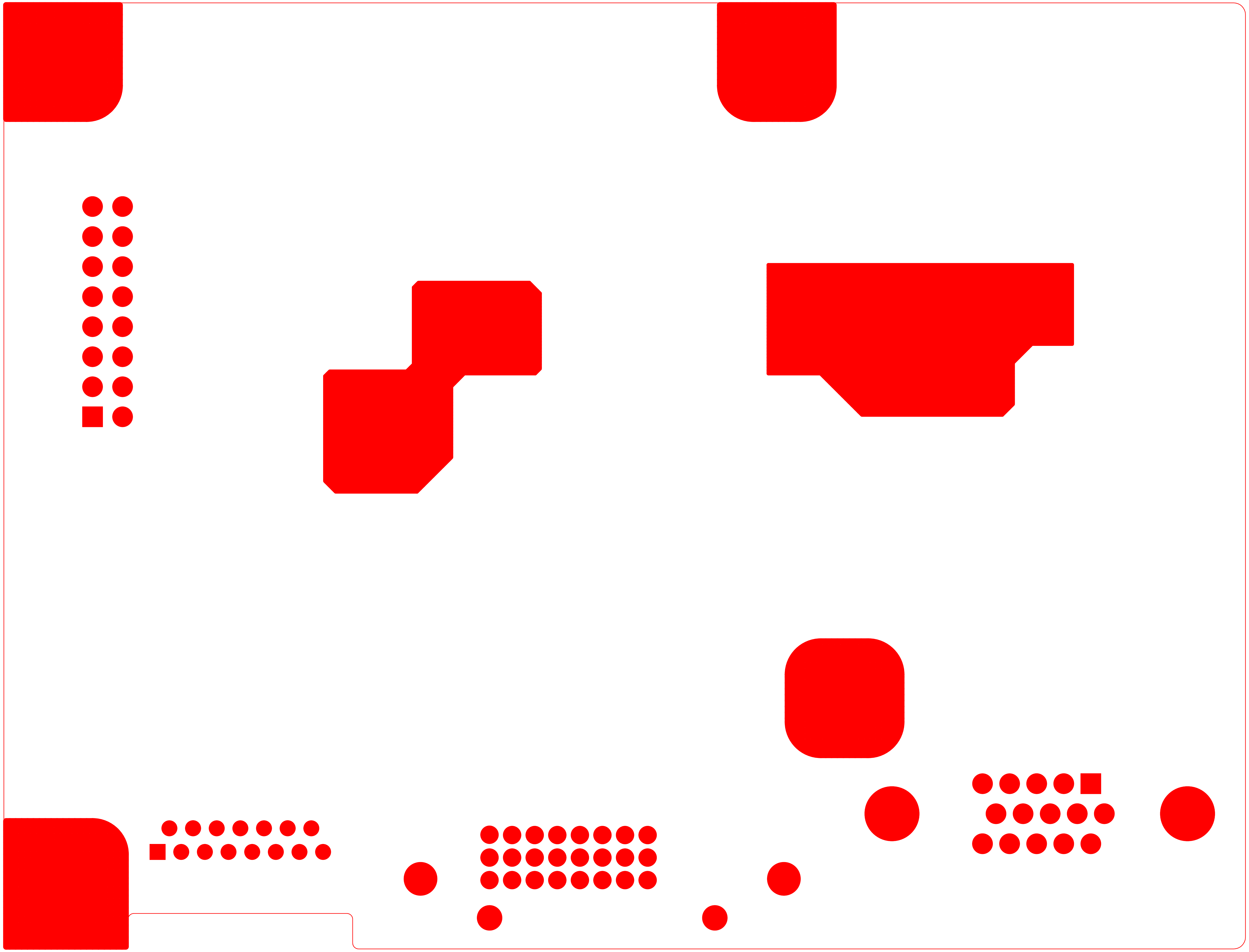
ViewSonic Corporation	
Model	
Title	MCU
Date	Rev:

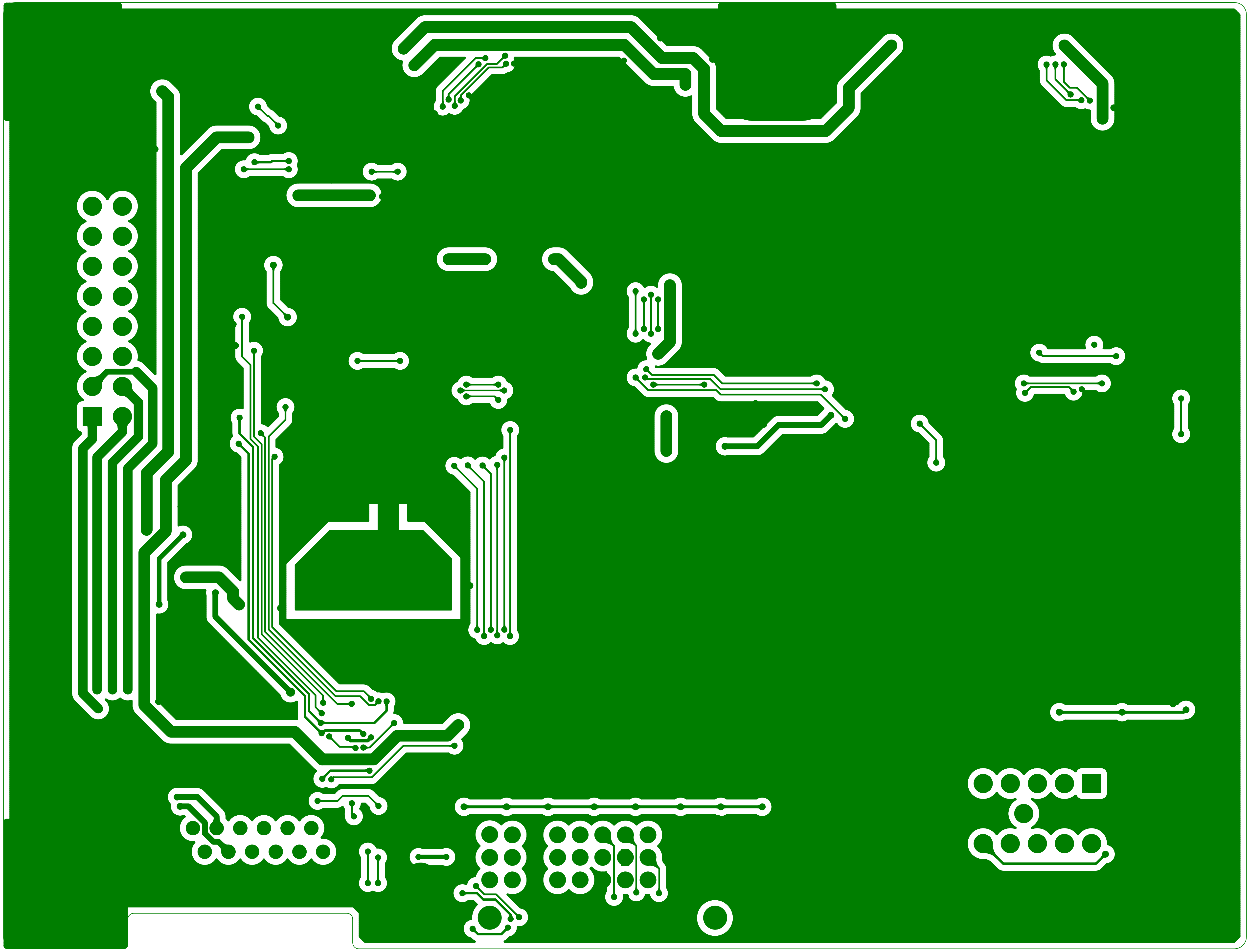


ViewSonic Corporation
Model
Title SCALER
Date
Rev:



ViewSonic Corporation	
Model	
Title	I/F
Date	Rev:

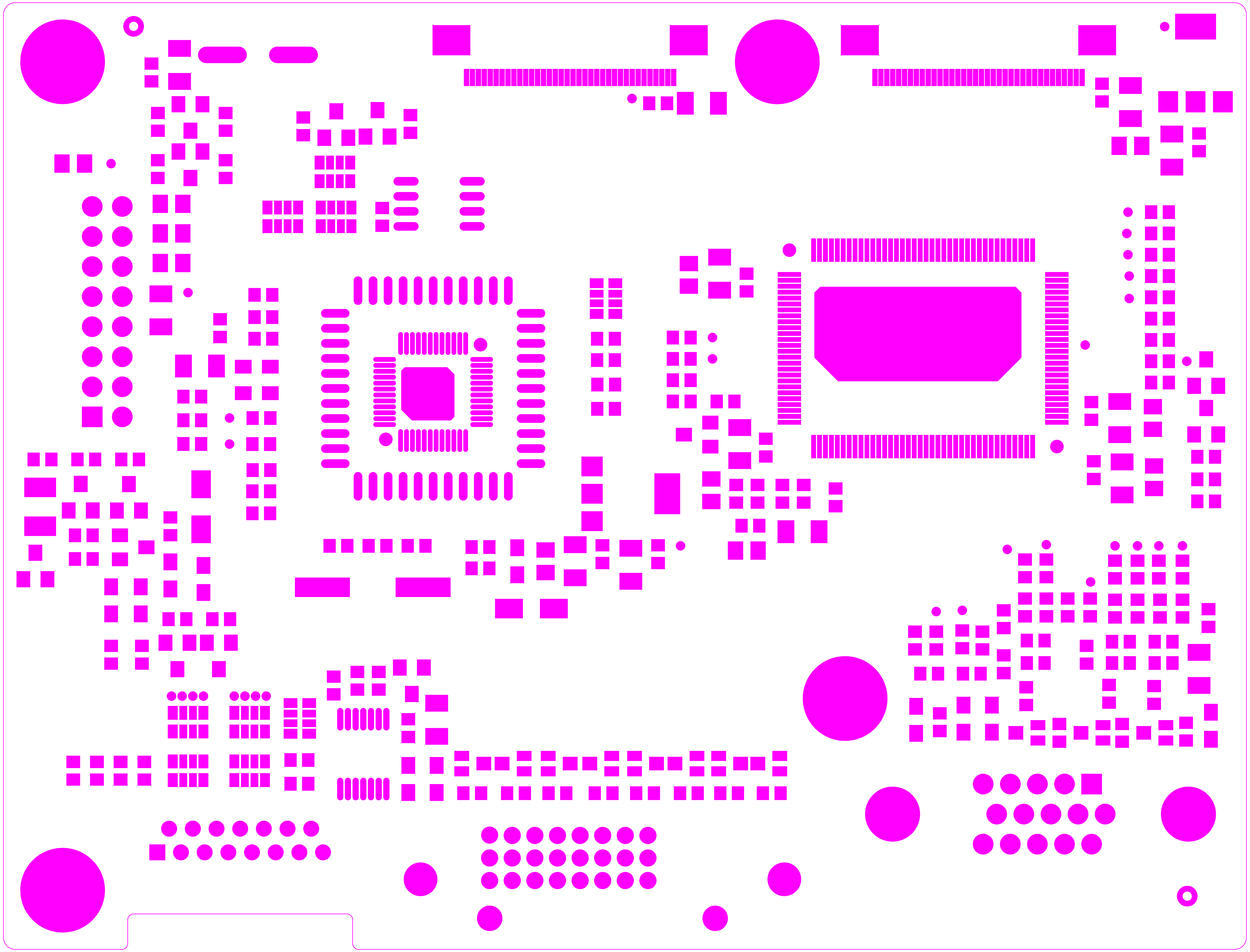


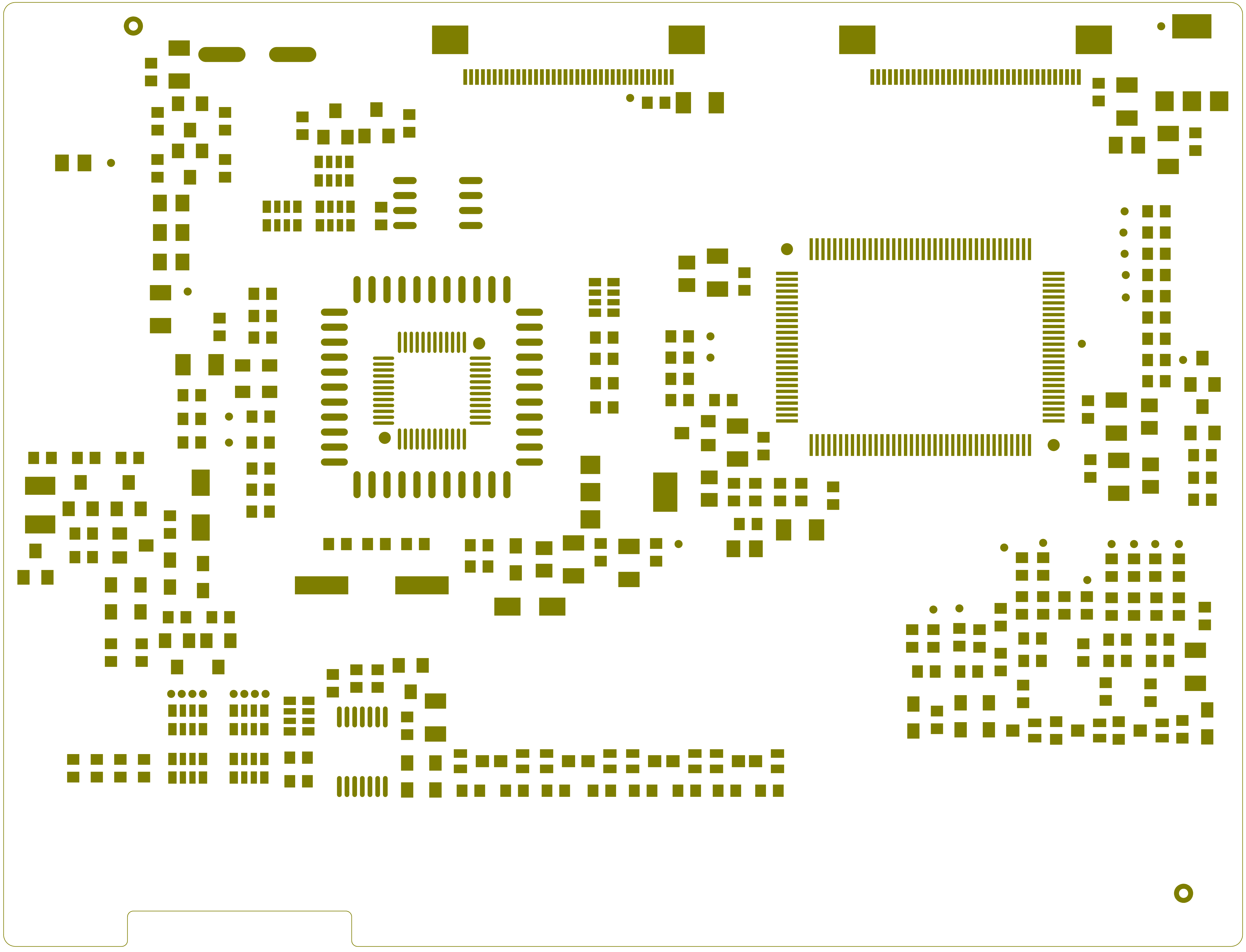


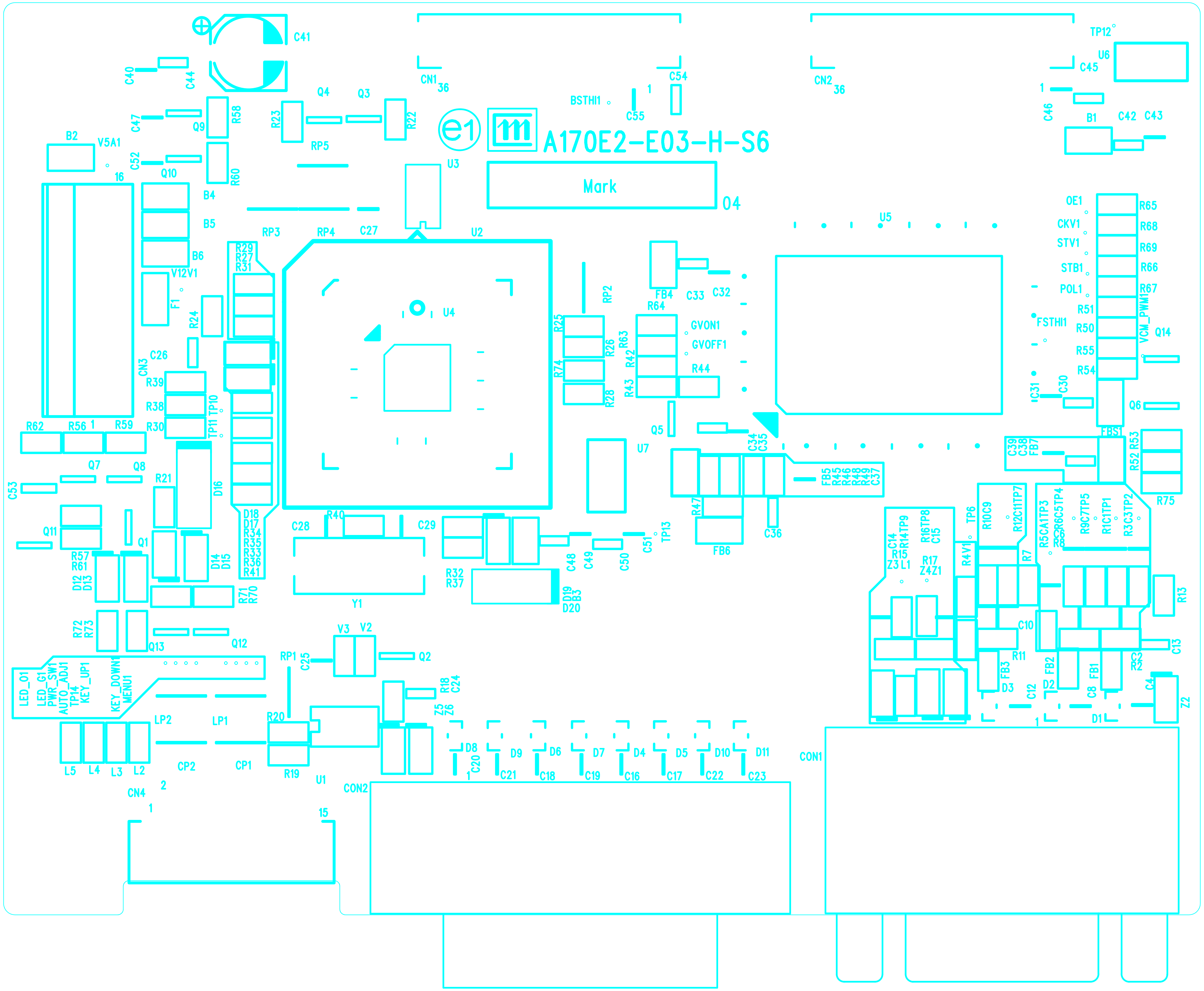

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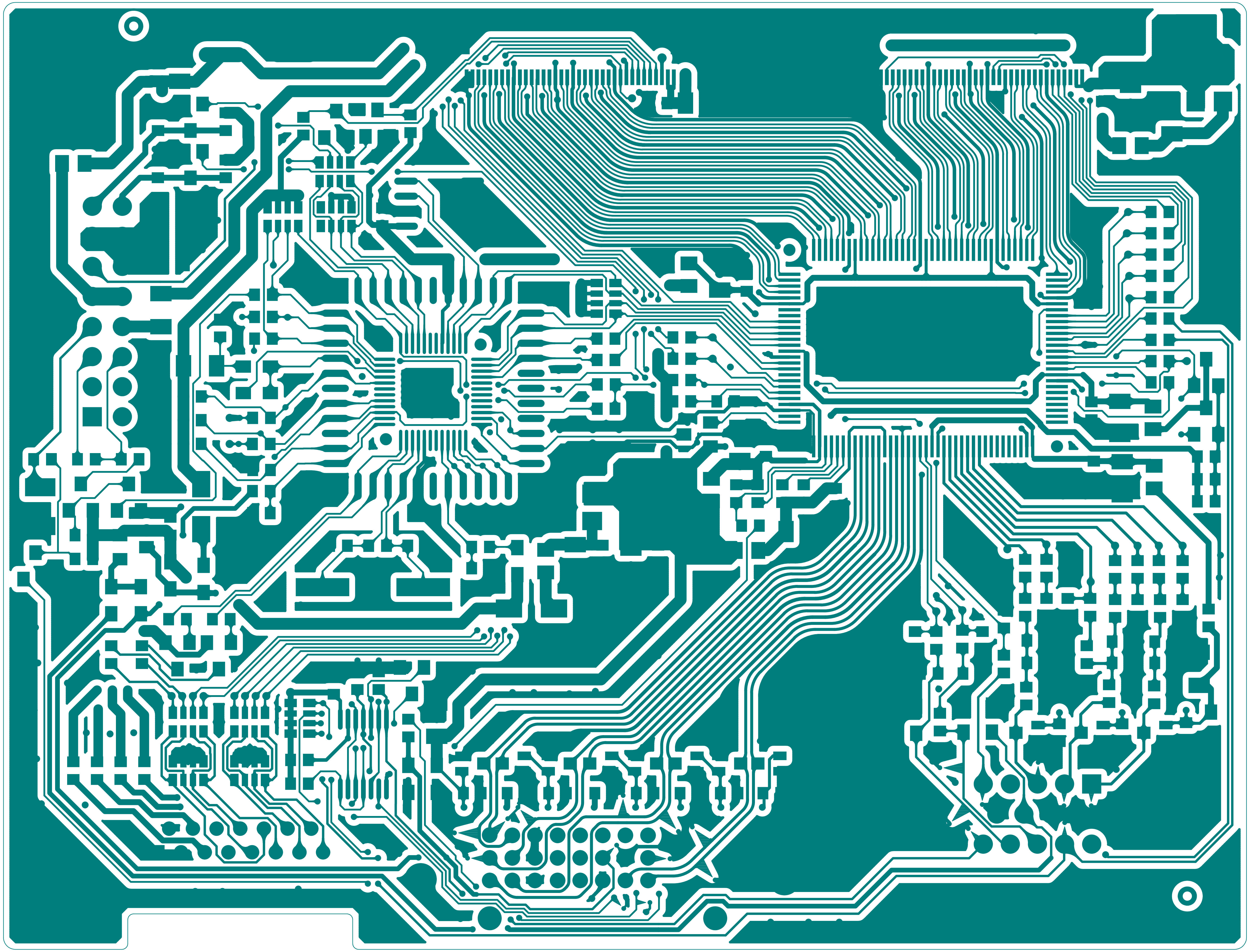


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4.3	4	⋈	PLTD
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0.3	378	B	PLTD
0.4	29	C	PLTD






A170E2-E03-H-S6
Mark
04
C41
CN1
CN2
U2
U3
U4
U5
U6
U7
Y1
CON1
CON2
CN3
CN4
C28
C29
R40
LED_O1
LED_G1
PWR_SW1
AUTO_ADJ1
TP14
KEY_UP1
KEY_DOWN1
MENU1
LP1
LP2
CP1
CP2
L2
L3
L4
L5
U1
R19
R20
RP1
RP2
RP3
RP4
RP5
BSTHI1
GVON1
GVOFF1
FSTHI1
OE1
CKV1
STV1
STB1
POL1
VCM_PWM1
TP12
B1
B2
V5A1
V12V1
F1



* Reader's Response*

Dear Readers:

Thank you in advance for your feedback on our Service Manual, which allows continuous improvement of our products. We would appreciate your completion of the Assessment Matrix below, for return to ViewSonic Corporation.

Assessment

A. What do you think about the content of this Service Manual?

Unit	*Excellent*	*Good*	*Fair*	*Bad*
1. Precautions and Safety Notices				
2. Specification				
3. Front Panel Function Control Description				
4. Circuit Description				
5. Adjustment Procedure				
6. Troubleshooting Flow Chart				
7. Recommended Spare Parts List				
8. Exploded Diagram and Exploded Parts List				
9. Block Diagrams				
10. Schematic Diagrams				
11.PCB Layout Diagrams				

B. Are you satisfied with this Service Manual?

Item	*Excellent*	*Good*	*Fair*	*Bad*
1. Service Manual Content				
2. Service Manual Layout				
3. The form and listing				

C. Do you have any other opinions or suggestions regarding this service manual?

Reader's basic dada:

Name:		**Title:**	
Company:			
Add:			
Tel:		**Fax:**	
E-mail:			

After completing this form, please return it to ViewSonic Quality Assurance in the USA at facsimile 1-909-839-7943. You may also e-mail any suggestions to the Director, Quality Systems & Processes (marc.maupin@viewsonic.com)